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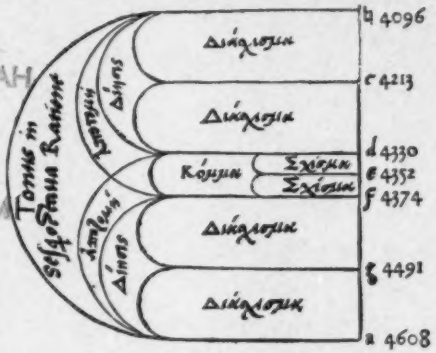

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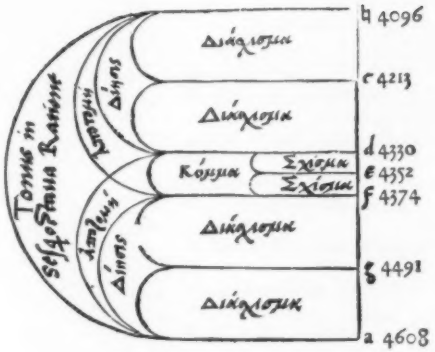

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SCHENKER'S CONCEPTION OF MUSICAL STRUCTURE

by

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A Review and an Appraisal with reference to Current Problems in Music Theory

When Heinrich Schenker died on January 14, 1935, he bequeathed to the musical world a small number of students, a large body of work in theory, and a considerable amount of controversy. For the latter, no end is yet in sight — nor is this necessarily harmful, since disagreement has often been an important and stimulating adjunct to musical thought. But without first establishing criteria and agreeing upon conditions, issues cannot be clearly drawn, even provisionally satisfactory conclusions cannot be reached — in short, intelligent public discussion is impossible. Further, these requirements presuppose that all participants are more or less equally well informed about the subject. Clearly this latter condition is not fulfilled where Schenker's theory is concerned, for although a large proportion of his published work is available, many musicians remain uninformed regarding its extent, significance, and pertinence to current problems in music theory.

The purpose of this article is therefore to present an introductory account of his conception of musical structure, to explain why it should be recognized by serious musicians, and, beyond this, to indicate how it might contribute toward the solution of certain problems which stand before music theory today.

The boldness and the very comprehensiveness of Schenker's work guarantee that he will be a controversial figure for years to come. However, I hope that this review of his work, by providing accurate information to those who are unfamiliar with it, will serve to place future discussions on a somewhat more rational basis than they have been in the past. Yet, even as I write these words, I prepare myself to be misunderstood — such is the price of disputation long conducted in an atmosphere of general misunderstanding.

Why is Schenker's work not more widely appreciated? Is it recondite, unreasonably difficult, lacking in practical significance? The following statements by two well-known musicians strongly support a negative reply.

> The first work which made Schenker's name known in wider circles was his monograph on the Ninth Symphony of Beethoven. This book came into my hands quite by accident in the year 1911 at Lübeck, where as a minor conductor I was

beginning my career. It immediately aroused my most intense interest. Although I was unable to endorse all of its details, and although the polemical posturing of the author went too far for me, the way in which questions were formulated and the conviction and insight with which these questions were answered were so unusual — indeed the whole was so far removed from the usual writings on music — that I was profoundly affected. Here for the first time were no hermeneutics; instead, the author inquired objectively and directly about that which actually stood before us in the work.[1]

Only later [following unfruitful studies with Bussler] under the influence of the writings of the profound theorist and musical philosopher, Heinrich Schenker, did I become aware of what I had missed and begin to grasp theoretical problems, or, rather, they grasped me; they even fascinated me.[2]

Quite understandably, the absence of English translations of Schenker's main works[3] must be held responsible for a great many undesirable aspects of the present situation. But, you ask, what of the books and articles in English which deal, to a greater or lesser extent, directly with his work? I shall attempt to answer this question as concisely as possible. Within the literature which has accumulated around Schenker's theory we can distinguish three types. First, there are surveys of his work. For the most part these are in the form of book reviews where space limitations prevent any kind of thorough coverage. Second, there are critiques of Schenker's concepts which have been published in article form. These invariably presuppose at least a partial acquaintance with his writings, permitting the author to stress those parts of Schenker's theory which support his particular argument. Third, we have several more extended theoretical works (in book form) which represent modifications and/or amplifications of his work, in part or whole. Unfortunately, these do not always make clear the extent to which Schenker's ideas are present in their original form. Therefore, broadly speaking, this entire literature has not contributed significantly toward the understanding of Schenker's work in his own terms.[4]

---

1. Wilhelm Furtwängler, Ton und Wort (Wiesbaden: Brockhaus, 1954).

2. Bruno Walter, Theme and Variations (New York: Alfred Knopf, 1946).

3. Only his Harmonielehre (1906) has been made available in English: Harmony, edited by Oswald Jonas, translated by Elizabeth Mann Borgese (Chicago: Chicago University Press, 1954).

4. An exception to this is Milton Babbitt's excellent condensed survey of Schenker's work included as part of a review of Felix Salzer's Structural Hearing in the Journal of the American Musicological Society, V:260-5. The best extended introduction to Schenker's theory is in German: Oswald Jonas, Das Wesen des musikalischen Kunstwerks (Vienna: Saturn-Verlag, 1934).

A further obstacle to more widespread understanding of Schenker's theory is that its applicability to important current problems in music theory has not been sufficiently appreciated. Partly because of the unfamiliar language and representational means which are integral to it, it has been regarded as a purely "theoretical" system, jealously fostered by an inner circle whose members are completely at odds with the musical world-at-large. True, Schenker's proponents inevitably found themselves in conflict with the rigid and arbitrary constructs of what has come to be known as traditional theory. On the other hand, most musicians are unaware of the extent to which Schenker's ideas have penetrated and modified that theory in recent years.

Then, too, many serious musicians who are not specialists have remained uninformed during the quarter-century following the completion of Schenker's work, because there has been no professional journal devoted to disseminating information about music theory — an essential task which the present periodical has undertaken.

Finally, in considering reasons for the failure of Schenker's work to gain acknowledgement, we must recognize the problem which often arises upon initial contact with his work: even the well-trained musician who reads Schenker for the first time is apt to be thrown off his intellectual balance, for he is confronted with new interpretations of what he has come to regard as familiar events. He is faced with the task of learning a new terminology, a new set of visual symbols, and, most important, a new way of hearing music.

By this I do not intend to suggest that Schenker's theory is without faults. Further on, when I discuss its deficiencies, I shall make an effort to avoid duplicating other critical treatments of Schenker's theories. This is easier to do than one might expect, because earlier treatments tend to emphasize aspects of Schenker's work which are less problematic now.[5] A major reason for this change is to be seen in the general trend in thinking which has taken place during the past quarter-century, a trend heavily influenced by the accelerated development of science. Even music has been affected, to the extent that, for example, we can now regard the late 19th-century concept of "modulation" merely as a verbal inaccuracy. There seems to be no further need to worry this, or, I trust, such equally moldy bones of contention as the degree of correspondence between Schenker's theoretical formulations and what was "in the composer's mind" as he composed.

Before describing the content of Schenker's work in greater detail, I should like to survey his achievement in general terms. From the viewpoint of the present-day music theorist, this may be likened to a particular kind of high-level achievement in science: the discovery or development of a fundamental principle which then opens the way for the disclosure of further new relationships, new meanings. Regarded in this way, Schenker's achievement invites comparison with that of

5. To the best of my knowledge the most recent extended critique of Schenker in article form is Michael Mann's "Schenker's Contribution to Music Theory," Music Review, X:3-26.

Freud. Just as Freud opened the way for a deeper understanding of the human personality with his discovery that the diverse patterns of overt behavior are controlled by certain underlying factors, so Schenker opened the way for a deeper understanding of musical structure with his discovery that the manifold of surface events in a given composition is related in specific ways to a fundamental organization. Over a period of years, Schenker's discovery gradually assumed a more distinct conceptual form which I shall refer to as the concept of structural levels. To articulate this idea Schenker invented a special vocabulary and devised a unique representational means. I will explain these further on.

I wish to emphasize at this point that the bases of Schenker's concept of structural levels, upon which his theory of music rests, are not to be found in abstruse speculation, or in acoustical or metaphysical formulations (although Schenker was not averse to these), but in the organization of the music itself. Schenker consistently derived his theoretical formulations from aural experiences with actual musical compositions, and verified them at the same source.[6] Furthermore, his analytic techniques, as well as his analytic concepts, are directly related to performance and compositional practices which stand at the very center of the development of tonal music. I shall return to this often neglected facet of Schenker's work further on.

Schenker's achievement — which might be termed the deepening of musical understanding through the discovery of the principle of structural levels — spans a period of some forty years, during which time he was engaged in a wide variety of activities. Because these activities were all closely associated with his main task, the development of his theory of musical structure, I should like to devote a few words to a description of them, indicating how they provided an appropriate setting for his work. Schenker was never associated with an educational institution. He earned his living mainly by giving private lessons in theory and piano. He was able to bring all his instructional activities within the scope of his theoretical formulations through a single, central activity: analysis. This is evident in his attitude toward performance. Following the lead of C. P. E. Bach here as elsewhere, Schenker believed that a composition could be reproduced correctly only if the performer had grasped the composer's intentions as revealed by the score, and if he had developed an aural sensitivity to the hierarchy of tonal values which it expressed. His corresponding viewpoint toward music education should gladden the heart of every hard-pressed counterpoint teacher. According to Hans Wolf, Schenker once made the following remark: "If I had my way, every instrumentalist would have theory as his major study. It is not enough for him simply to play mechanically, as though he has Czerny exercises before him. They say they have practiced (especially the ladies). But what is the use of that? What Geist makes their practicing vital? In painting and poetry

6. A certain amount of confusion in this regard may be attributed to Schenker's frequent indulgence in lengthy ontological justification of his concepts.

Czerny exercises do not exist!"[7]

Schenker's pedagogical activities appear to have occupied a central position in his life. Almost all his writings are intended to instruct — in the most "practical" sense of that term. One sometimes overlooks the fact that his magnum opus, Neue Musikalische Theorien und Phantasien,[8] is actually a self-contained series of textbooks which were published intermittently over a span of thirty-four years. Outwardly, the pedagogical goal of this series is direct, even old-fashioned, namely, to provide instruction in the traditional subjects of harmony and counterpoint. But — and here is Schenker's innovation — this instruction is so designed that it leads stage by stage to an understanding of the total work in all of its complexity. The boldness and uniqueness of this plan is hardly less striking today than it was a quarter of a century ago. Consider, for example, that in the first volume of his Kontrapunkt Schenker relates rudimentary species counterpoint exercises to the elaborate structural events in composed works, and that the relationships established are not of the obvious and transitory nature so often encountered in textbooks, but are far-reaching, cogent, and in the best sense, musical.

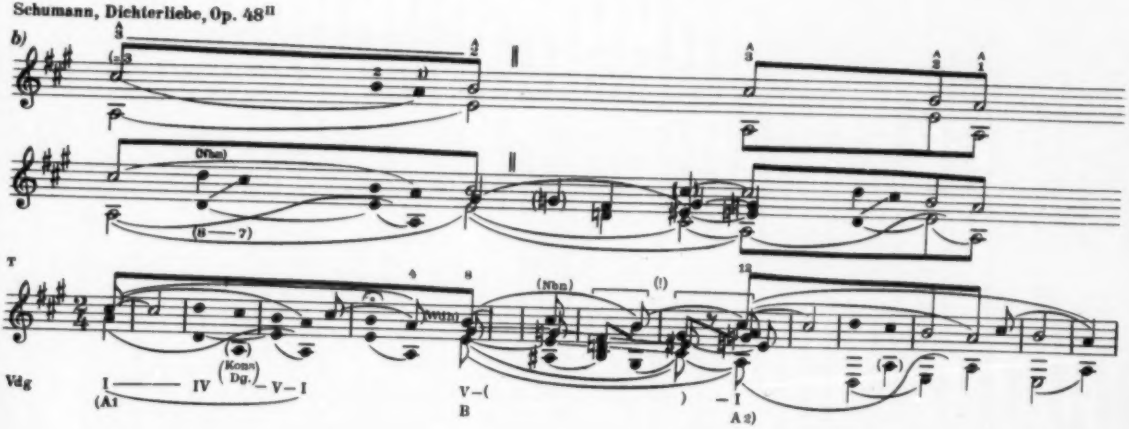
To continue this short account of Schenker's activities, I turn to his work as editor. It is perhaps not exaggerating to say that, in his explanatory editions of the late Beethoven sonatas, Schenker gave a major impetus to the entire modern movement toward better editing practices. In preparing that edition (published 1913-1920) as well as the complete edition of the Beethoven sonatas, the C. P. E. Bach sonatas and the J. S. Bach Chromatic Fantasy and Fugue, he employed the procedure, now standard, of consulting autographs and first editions in order to arrive at the best possible reading. Whenever they were available, he also studied compositional sketches and copies revised by the composer.

Autograph study played an especially important role both in Schenker's editions and in his analyses. He regarded the autograph not only as an authoritative source (in conjunction with the first edition) for making decisions about the externals of the music (notes, slurs, etc.) but as an indicator of more elusive properties, for example, rubato, dynamics and phrasing. As is the case with other aspects of his work, Schenker's contributions to the field of autograph study have not been widely acknowledged by the profession. Fortunately, Schenker (never one to conceal his accomplishments) took the precaution of securing credit for himself by means of a single sentence in Der Freie Satz (p. 33) where he claims the honor of being "the founder of the science of autograph study."

However, it is in the application of his theory of musical struc-

7. Hans Wolf, "Schenker's Persönlichkeit in Unterricht," Der Dreiklang, VII:176-84. (My translation)

8. Heinrich Schenker, Neue musikalische Theorien und Phantasien (3 vols.); Vol. I: Harmonielehre, Vienna, 1906; Vol. II (erster Halbband): Kontrapunkt, Stuttgart & Berlin, 1910; Vol. II (zweiter Halbband): Kontrapunkt, Vienna, 1922; Vol. III: Der Freie Satz, Vienna, 1935.

Example 1. Figure 22a from the Anhang to Der Freie Satz.

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ture to the analysis of a wide variety and large number of compositions by means of unique procedures that Schenker is most outstanding.[9] The most important and definitive segment of Schenker's analytic work is contained in the Anhang to Der Freie Satz, a collection of 550 illustrations drawn from the literature of tonal music. These include examples of details as well as analytic sketches of complete movements from extended works. Here the representational devices developed by Schenker reach a degree of refinement which renders lengthy verbal explanation unnecessary.[10] Since these sketches use the symbols of standard musical notation, augmented by arrows, brackets, dotted lines, etc., much of the information they present is readily accessible to the musician, although he may not read German, provided he has had some instruction in interpreting the signs with relation to Schenker's thought. Further on I shall provide a commentary upon an analytic sketch, which is designed to introduce the reader to Schenker's notational devices as well as to his ideas of musical structure. First, however, I would like to complete this brief survey of Schenker's life work by mentioning two projects which interested him considerably, but which he did not live to complete. One of these was an instruction book on form, apparently intended to supplement the final chapter of Der Freie Satz, where the subject is given only a cursory treatment. The second was a book on interpretation (Die Kunst des Vortrags). However, this did reach a certain state of completion and I understand it is to be published in Germany under the editorship of Oswald Jonas.

I can think of no more satisfactory way to introduce Schenker's ideas, along with the terminology and visual means which express them, than to comment at some length upon one of his analytic sketches. For this purpose I have selected from Der Freie Satz a sketch of a complete short work, the second song from Schumann's Dichterliebe (Ex. 1, p. 6). I shall undertake to read and interpret this sketch, using, of course, English equivalents for Schenker's terms.[11]

Here in visual form is Schenker's conception of musical structure: the total work is regarded as an interacting composite of three main levels. Each of these structural levels is represented on a separate staff in order that its unique content may be clearly shown. And to show how the three levels interact, Schenker has aligned corresponding

9. On this point Milton Babbitt has written: "...Schenker has contributed...a body of analytical procedures which reflect the perception of a musical work as a dynamic totality, not as a succession of moments or a juxtaposition of 'formal' areas related or contrasted merely by the fact of thematic or harmonic similarity or dissimilarity." (op. cit.)

10. I stress the adjective "lengthy" here. Obviously a certain amount of verbal explanation is required.

11. The rendering of Schenker's technical expressions into English presents a number of problems, not the least of which is the fact that there are already, in some cases, two or more published versions of the same term. It is to be hoped that with the publication of Der Freie Satz (now being translated) a standard nomenclature will be established.

elements vertically. I shall first make a quick survey of this analytic sketch and then give a more detailed explanation.

The lowest staff contains the major surface events, those elements which are usually most immediately perceptible. Accordingly, Schenker has designated this level as the foreground. In deriving his foreground sketch from the fully notated song, Schenker has not included all its actual note values. Those which he does include represent in some cases the actual durational values of the work; but more often they represent the relative structural weight which he has assigned to the particular tone or configuration. This sketch omits repeated tones, and shows inner voices in mm. 8-12 only, indicating that there they have greater influence upon the voice-leading.

On the middle staff Schenker has represented the structural events which lie immediately beyond the foreground level. These events, which do not necessarily occur in immediate succession in relation to the foreground, comprise the middleground. It should be evident now that the analytic procedure is one of reduction; details which are subordinate with respect to larger patterns are gradually eliminated — in accordance with criteria which I will explain further on.

Finally, on the upper staff, he has represented the fundamental structural level, or background, which controls the entire work.

Now let us consider the content of each level in some detail. This will provide an opportunity to examine other important aspects of Schenker's thought, all derived from his central concept.

A series of sketches such as this can be read in several directions. For the purpose of the present introductory explanation it would seem advantageous to begin with the level which contains the fewest elements and proceed from there to the level which contains the most — thus, reading from top to bottom or from background to foreground. By reading the sketches in this order we also gain a clear idea of Schenker's concept of prolongation: each subsequent level expands, or prolongs, the content of the previous level.

The background of this short song, and of all tonal works, whatever their length, is regarded as a temporal projection of the tonic triad. The upper voice projects the triad in the form of a descending linear succession which, in the present case, spans the lower triadic third. Schenker marks this succession, which he called the Urlinie, or fundamental line, in two ways: (1) with numerals (and carets) which designate the corresponding diatonic scale degrees, and (2) with the balken which connects the stemmed open notes (I shall explain the black noteheads shortly). The triad is also projected by the bass, which here outlines the triadic fifth, the tonality-defining interval. Schenker calls this fundamental bass motion Bassbrechung, or bass arpeggiation. Like the fundamental line, it is represented in open note-heads. The fundamental line and the bass arpeggiation coordinate, forming a contrapuntal structure, the Ursatz, or fundamental structure which consti-

tutes a complete projection of the tonic triad.[12] Thus, to Schenker, motion within tonal space is measured by the triad, not by the diatonic scale.

Observe that in this case the most direct form of the fundamental structure would be the three-interval succession in the outer voices: fundamental line, $\hat{3}$-$\hat{2}$-$\hat{1}$ bass arpeggiation, I-V-I. The background sketch shows that this succession occurs consecutively only in the last part of the song. The song begins unambiguously with $\frac{\hat{3}}{I}$; however, it does not progress immediately to $\frac{\hat{2}}{V}$ and from there on to $\frac{\hat{1}}{I}$; instead, the first interval is prolonged as shown in the sketch: the upper voice C-sharp first receives an embellishment, or diminution, in the form of the third-spanning motion, C-sharp—B—A (represented in black noteheads), and then moves over a larger span (shown by the beam) to B on the last eighth-note of m. 8, where it is supported by the bass V. (This V is not to be equated with the final V (m. 5), which effects a closure of the fundamental line.) Schenker then shows how this initial prolongation is followed by a restatement of $\frac{\hat{3}}{I}$ and the completion of the succession $\hat{3}$-$\hat{2}$-$\hat{1}$, I-V-I.

To recapitulate, there are two prolongational classes shown in this background sketch. The first includes diminutions, or prolongational tones of shorter span (represented by black noteheads); the second includes the larger prolongational motion from $\hat{3}$ to $\hat{2}$ (connected by the beam) which comprises the controlling melodic pattern of the first phrase. Schenker regards this larger prolongational motion as an interruption of the direct succession, $\hat{3}$-$\hat{2}$-$\hat{1}$, I-V-I, and represents it by placing parallel vertical lines above the staff following $\frac{\hat{3}\text{-}\hat{2}}{\text{I-V}}$. The fundamental structure, which is in this case the uninterrupted succession $\hat{3}$-$\hat{2}$-$\hat{1}$, I-V-I therefore may be considered as the essential content of the background.[13] In reading Schenker's analytic sketches a distinction must often be drawn between the background level in toto, which sometimes includes prolongations of primary order as in the present case, and the essential content of that level, the fundamental structure. Thus, "fundamental structure" designates a specific contrapuntal organization which assumes several possible forms, whereas "background" is a term which may include other events in addition to the fundamental structure, as in the present instance, where it includes two prolongations, each belonging to a different structural order. This distinction, not always clearly drawn by Schenker, is indispensable to the full understanding of his sketches and commentaries. In this connection I point out that within each of the three main structural levels several sub-levels are pos-

12. Each tonal work manifests one of three possible forms of the fundamental line, always a descending diatonic progression: 3-1 (as in the present case), 5-1 and 8-1. Variants upon these forms arise when the bass arpeggiation disposes the fundamental line components in different ways.

13. It should be apparent that Schenker's major concept is not that of the Ursatz, as is sometimes maintained, but that of structural levels, a far more inclusive idea.

sible, depending upon the unique characteristics of the particular composition.[14]

The idea of the interrupted fundamental line provides the basis for Schenker's concept of form. For example, in the typical sonata-allegro form in the major mode, interruption of the fundamental linear progression at the close of the exposition normally gives rise in the development section to a prolongation which centers on V. Of course, the prolonged fundamental line component varies, depending upon which form of the fundamental structure is in operation and upon which specific prolongation motions occur at the background level.

Before explaining the middleground, I should like to direct attention again to the diminution which spans the third below C-sharp (black noteheads). By means of the numerals 3, 2, 1, enclosed in parentheses, Schenker indicates that the motion duplicates the large descending third of the fundamental line. This is an instance of a special kind of repetition which Schenker called Uebertragung der Ursatzformen (transference of the forms of the fundamental structure). Throughout his writings he demonstrates again and again that tonal compositions abound in hidden repetitions of this kind, which he distinguishes from more obvious motivic repetitions at the foreground level.

We can interpret the content of the middleground most efficiently by relating it to the background just examined. The first new structural event shown at the middleground level is the expansion of the smaller prolongational third (black noteheads) by means of the upper adjacent tone,[15] D, which serves as a prefix. The sketch shows how this prolongational element is counterpointed by the bass in such a way as to modify the original (i.e. background) third. That is, the figured-bass numerals in parentheses indicate that the second C-sharp (black notehead) is a dissonant passing-tone, and therefore is not to be equated with the initial C-sharp, which serves as the point of departure for the fundamental line. The adjacent tone D recurs in m. 14, where Schenker assigns more structural weight to it, as indicated by the stem. I reiterate that conventional durational values are used in the analytic sketches to indicate the relative position of a given component or configuration in the tonal hierarchy — the greater the durational value, the closer the element to the background.

---

14. Undoubtedly Schenker compressed many of his sketches in consideration of the practical requirements of publication. Mr. Ernst Oster, who has in his possession a large number of Schenker's unpublished materials—which he plans to present along with commentaries at a future date—has brought this to my attention. Schenker's unpublished sketches of Brahms' Waltzes, Opus 39, for example, are executed on several superimposed staves, so that each structural level is shown distinctly and in detail.

15. Schenker's abbreviation, "Nbn," stands for Nebennote, or in English, adjacent tone (not "neighbor tone").

In addition to the prolongation described in the preceding paragraph, the middleground contains the essentials of the prolongational middle section (mm. 10-12) which appears in more detail in the foreground sketch. Schenker regards this entire middle section as a prolongation of the background fifth formed by $\frac{2}{V}$. Its main feature is the inner voice which descends from G-sharp to E, a middleground duplication of the fundamental line's third. The bass which counterpoints this inner voice arpeggiates the tonic triad, E—C-sharp—A. Schenker shows how the arpeggiation is partially filled in by the passing tone, D, and by slurring E to A he indicates that he considers that motion to be the controlling bass motion, within which the C-sharp functions as a connective of primarily melodic significance.[16] Here we have an example of the careful distinction which Schenker always draws between major bass components or Stufen, which belong to the background level, and more transient, contrapuntal-melodic events at the foreground and middleground levels.

A brief consideration of three additional events will complete our examination of the middleground level. First, observe that the diatonic inner-voice descent in the middle section, G-sharp—E, is filled in by a chromatic passing-tone, G. Schenker has enclosed this in parentheses to indicate that it belongs to a subsidiary level within the middleground. Second, observe that just before the inner-voice motion is completed on the downbeat of m. 12, the G-sharp, its point of departure, is restated by an additional voice which is introduced above it. Schenker has pointed out that in "free" compositions, particularly instrumental works, the possibility of more elaborate prolongation is greatly increased by introducing additional voices, as well as by abandoning voices already stated. The final event to observe here occurs in the middle section: the motion from B, the retained upper voice, to C-sharp on the downbeat of m. 12. This direct connection does not actually occur at the foreground level, but Schenker, feeling that it is strongly implied by the voice-leading context, encloses the implied C-sharp in parentheses and ties it to the actual C-sharp, thereby indicating that it is an anticipation.

In the foreground sketch Schenker represents for the first time the metrical organization of the song. As I have already mentioned, he shows there some of the actual durational values, in addition to using these as sketch symbols. This reveals the position assigned to meter and rhythm in his system: he considered them to be important structural determinants at the middleground and foreground levels but subsidiary to the fundamental tonal organization, which, he maintained, was arhythmic. I shall return to this further on when I consider the general problem of constructing a theory of rhythm for tonal music.

Let us now examine some of the relationships which Schenker has shown in his sketch of the foreground, this time beginning with the bass. In m. 3 he encloses the bass-note A in parentheses and marks it

16. "The bass executes an arpeggiation, descending through the third, but without terminating the interruption," Der Freie Satz, p. 89. This is one of Schenker's few comments upon this sketch.

with the abbreviation, Kons. Dg. (Konsonanter Durchgang or "consonant passing-tone"). By this he indicates that the tenth which the bass A forms with the upper-voice C-sharp transforms the latter, a dissonant passing-tone at the middleground level, into a consonance at the foreground level. In this way he also intends to indicate the function of the chord at that point. Since it supports a passing-tone in the upper voice it is a passing chord. In addition, it belongs only to the foreground and therefore is to be distinguished from the initial tonic chord, a background element. Two of Schenker's most important convictions underlie this treatment of detail: (1) that the study of strict counterpoint provides the indispensable basis for a thorough understanding of the details, as well as the larger patterns of a composed work, and (2) that the function of a chord depends upon its context, not upon its label. This can be seen in his notation of the chords in this sketch. Although he uses the conventional Roman numerals he provides them with slurs, dashes and parentheses to show their relative values in the tonal hierarchy. Thus, the long slur from I to I indicates that the IV and V chords lie within the control of that chord, while the abbreviation, Vdg. (Vordergrund) shows that the succession belongs to the foreground. And in the middle section, mm. 8-12, the parentheses show that the chords between V and I are subsidiary chords. These arise as part of the prolongational complex at that point and stand in contrast to the stable background chords I and V.

Now let us turn to the melody. We can most efficiently examine its structure by first comparing each foreground prolongation (slurred) with the larger middleground prolongation immediately above it, and then by relating both the foreground and middleground to the background. In this way we see that the foreground prolongation of the first section spans a descending third twice, thus duplicating the successively larger thirds at the middleground and background levels. In the middle section the melody undergoes more elaborate development. There, by means of connecting beams, Schenker shows how the upper voice skips down to the inner voice and back again. The ascending skips comprise a sequence of two fourths, which are marked by brackets and emphasized by a typically Schenkerian exclamation point. This sequence lends support to his reading of the implied anticipation of C-sharp in the upper voice of m. 12, mentioned earlier.

The foreground of the middle section provides a good example of Schenker's concept of "melody" (he avoided the term in his writings) as a self-contained polyphonic structure. This valuable aspect of his theory,[17] which is absolutely indispensable to any kind of intelligent melodic analysis, is well substantiated by compositional practice. There are many passages in the literature where polyphonic melodies, implied at one point (often the beginning) are subsequently realized in

17. A highly interesting application of this concept is to be found in Schenker's essay, "Das Organische der Fuge," (Jahrbuch II, see footnote 20), where he employs his technique of synthesis, or reconstruction, to demonstrate that the subject of Bach's C-minor Fugue (WTC I) implies a complete, self-contained contrapuntal structure.

full, for example in the first movement of Mozart's Sonata in A minor, or in Brahms' Intermezzo in B-flat major, Op. 76/4; and, of course, we find a special development of this concept in Bach's compositions for solo violin and for solo 'cello.[18] Here, in the foreground sketch of the middle section the diagonal beams show that the vocal melody shifts back and forth between two lines, the lower of which belongs to the accompaniment. It is evident that this section contains the most intricate upper-voice prolongation.

It also contains the most elaborate bass motion. The sketch shows how the bass provides counterpoint to the upper-voice (foreground) prolongation of B, bass and upper voice comprising the interval succession 5-10-5-10-5, which is enclosed within the middleground outer-voice succession, $\begin{matrix} B\text{—}C\text{-sharp} \\ E\text{—}C\text{-sharp} \end{matrix}$. Observe that the upper voice alternates between an upper adjacent-tone prolongation of B (marked Nbn.) and the skips into the inner voice which were explained in the preceding paragraph. The lowest voice in this passage is subordinate to the voice which lies immediately above it, E—D—C-sharp, the latter succession being the actual bass line (cf. middleground sketch). Nor does its registral position above the foreground bass lessen its importance as the main motion-determinant in the lower voices. Therefore, the foreground bass which displaces or covers it registrally might be termed a "pseudo-bass."[19]

One final aspect of the foreground sketch deserves mention: the form. Schenker indicates this with the customary letters and exponents. The foreground form therefore corresponds to the form-generating interruption at the middleground and background levels as follows:

Statement	Interruption	Restatement and Closure
A^1	B	A^2

It should be apparent that an analysis of this kind embraces all the information generally included under the heading "form and analysis" but that it goes far beyond to interpret the relationships to the background which are revealed during its initial phases, where the main concern is to achieve an accurate reading of foreground and middleground.

A summary of this analysis should properly include a classification of the chromatic chords in the middle section of the piece, and a more precise explanation of the coordination of linear intervals at the foreground level, the descending thirds and fifths (which latter take the form of diminished fifths and ascending fourths in the middle section). However, because of space limitations, I shall not undertake a sum-

18. Cf. Johann David Heinichen, Der General-Bass in der Composition (Leipzig, 1728), pp. 558ff: "Das 2-stimmige Harpeggio," "Das 3-stimmige Harpeggio," etc.

19. Relationships of this kind occasionally cause students to be confused; by assigning a structural event to the wrong level they necessarily arrive at a misreading. The technique of reconstruction serves as a corrective in such instances.

mary here, but instead go on to discuss other aspects of Schenker's work. If the preceding commentary has succeeded in demonstrating some of Schenker's more important ideas, as well as clarifying some of the vocabulary and visual devices which he employs to express those ideas, it has fulfilled its purpose.

I turn now to the development of Schenker's theory and to its sources in musical practice. The concept of structural levels, which, as I have pointed out, is central to Schenker's theory, was first set forth in the analyses published in Der Tonwille (1921-24). However, the idea of the background and its essential content, the fundamental structure, did not emerge clearly until many years later; not until the publication of Der Freie Satz (1935) was it definitively stated. Schenker was very much aware, in retrospect, of the development of Ursatz concept and the representational means which he so closely associated with it. Thus, in the introduction to Der Freie Satz he remarks (with characteristic pride): "Since the task of being the first to discover the background world in music devolved upon me I was not spared the difficulty of finding symbols which would represent it, a task which required many years. Furthermore, the engravers did not always display the requisite degree of understanding. For these reasons the illustrations in, for example, the issues of Der Tonwille and in the Jahrbücher[20] have not always revealed the final structure."

Although Schenker explained his relationship to theorists of the past in considerable detail (his Kontrapunkt for example includes quotations from Fux, Albrechtsberger, Bellermann, Cherubini), he did not spell out the basis in musical practice of his main tool, the reduction technique, with which he revealed and articulated tonal organization. Possibly he was unaware that it required explanation or justification. However this may be, subsequent misunderstanding of his work, allegations of arbitrariness, and failure to recognize his direct link with the traditions of music, suggest that an explanation is in order. In brief, the analytic technique of reduction derives from the compositional technique of variation, as it developed during the tonal period.[21] At the risk of oversimplifying, I point out that reduction is approximately the reverse of variation. By means of variation techniques a basic structure becomes more elaborate, in terms of increasing number and variety of melodic-rhythmic events. Reduction accomplishes the reverse; detail is gradually eliminated in accord with the traditional distinction between dissonant and consonant tones (made with reference to the tonic triad, the elemental consonance) so that the

20. Schenker usually referred to the three volumes of Das Meisterwerk in der Musik as the Jahrbücher (yearbooks), abbreviated Jhrb. (Munich: Drei Masken Verlag, 1925, 1926, 1930).

21. This development is interestingly documented in Ernest Ferand's anthology, Die Improvisation in Beispielen aus neun Jahrhunderten abendländischer Musik (Köln, Arno Volk Verlag, 1956). Mr. Ferand's illustrations and commentary substantiate Schenker's conviction that variation procedures are shared by formal composition and extempore composition.

underlying, controlling structure is revealed.[22] Although Schenker amplified and refined this procedure, it is far from being his innovation. Reductions of a rudimentary kind are to be found in, for example, many of the 16th-century textbooks on diminution, in the 17th-century writings of Bernhard, and in the 18th-century tome on figured-bass by Heinichen (see footnote 18). The latter author makes extensive use of reductions to explain the process of Verwechslung (prolongation, in Schenker's terms) as well as to analyze certain passages purported to be "incorrect" by colleagues. All of these treatises lend strong support to Schenker's musical thought and, on the negative side, demonstrate the extent to which 19th-century theorists obscured the relationship between theory and practice so firmly established at the close of the 18th century.

In Schenker's early analyses, the reduction technique served to reveal only the sub-levels within the foreground and to a certain extent the middleground. Thus, the Urlinie of 1921 is not the Urlinie of Der Freie Satz. The latter is a single linear progression which spans the whole work under specific contrapuntal conditions. The Urlinie of 1921 corresponds more closely to what Schenker ultimately would designate a Zug (linear progression) at the middleground level. Thus, with the development and refinement of the concept of structural levels, Schenker, probing ever more deeply into musical structure, went beyond mere reduction and description; he began to interpret the reduction with reference to a unique conception of structural coherence, a bold and imaginative formulation of the organizing forces of triadic tonality. While doing this, he greatly enlarged the traditional notions of harmony and counterpoint and at the same time made them far more specific. These are embodied in the Ursatz, where the fundamental line represents the contrapuntal-melodic dimension and the bass arpeggiation represents the harmonic.

Critics of Schenker seem to fall into two general categories: in the first are those who reject his attitude toward music and music study, and in the second are those who reject either part or all of his theoretical system.[23] Of the latter group of critics, by far the largest

22. Curiously enough, Schenker did not explain in his writings how to carry out a reduction. Whatever his reasons for this may have been, he is probably being sarcastic when he suggests in Der Freie Satz that the reader who wishes to arrive at the deeper structural levels need only apply the method of reducing more extended diminutions which is taught in all schools and textbooks. Such an undertaking, even supposing the student grasped the bare essentials, would be like translating from a foreign language word by word, mechanically, without understanding its syntax or idioms. At the Mannes College of Music, where Schenker's theory has been taught since Hans Weisse introduced it in 1931, students normally require a full year of instruction before they achieve the kind of facility which enables them to deal with more complex works.

23. Implicit here is a distinction between Schenker as theorist and Schenker as philosopher-historian. Schenker's interpretation of music history rarely demonstrated the same clear, rigorous thinking

number question the validity of the Ursatz, the fundamental structure.[24]

The fundamental structure can be justified on perceptual grounds. Relevant to this, Furtwängler has called Schenker's great accomplishment the discovery of Fernhören (literally, "distance-hearing"). And the fundamental structure can be justified on historical grounds. I have already explained its direct connection with traditional practices in composition and performance. But it is also, and perhaps most importantly, justifiable on methodological grounds. By this I mean that if, in analysis, the fundamental structure is regarded as a generalized characteristic of the composed music of triadic tonality, if it is regarded as a structural norm, as a construct which is always subject to modification when the structural events of a particular work do not support it, then surely a number of objections disappear. Understood in this way, the fundamental structure is one norm — at a high level of abstraction — among a number of others, such as root progression by fifths, sonata-allegro form, stepwise resolution of dissonance, which are now widely utilized, generally without question. It should be remarked here that some of Schenker's critics are not always explicit as to whether they reject only his structural norms or structural norms altogether. This makes communication difficult, if not impossible.

Although Schenker came very close to constructing a complete system, further refinement and amplification are required if it is to fulfill its promise. Superficial criticism is particularly damaging to efforts along this line. Specific deficiencies are only obscured when it is alleged that faults in Schenker's theory can be traced to his rigidity and arbitrariness. These characteristics, which are by no means typical, are symptomatic rather than causal. The important deficiencies in his system arise from his failure to define with sufficient rigor the conditions under which particular structural events occur. An instance of this, in my opinion, is the upper-voice event which Schenker called Anstieg, an initial stepwise, usually ascending "space-opening" motion to the first tone of the fundamental line. Schenker, in failing to describe fully the conditions under which this event occurs, opened the way for inaccurate readings, even of entire works. Its nature becomes clear when the following factors are taken into consideration: (1) the triadic tone which is the goal of motion; (2) the

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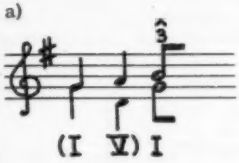
which is evident in much of his theoretical work. I therefore find myself at odds with Mr. Michael Mann who has based an extensive article (see footnote 5) upon the thesis that "the dogma on which Schenker's descriptive music theory is based cannot be judged apart from his outlook on music history." In my opinion this is fallacious. The same criterion applied to Freud's outlook on anthropology in relation to his psychological theories would yield curious results indeed.

24. In reply to one criticism of the Ursatz, Milton Babbitt has written: "Nothing could be less accurate than Daniskas' characterization of Schenker's method as embodying a 'static' notion of tonality." (op. cit.) Mr. Babbitt refers to John Daniskas' Grondlagen voor de Analytische Voormleer der Musik (Rotterdam, 1948). Leonard B. Meyer echoes Daniskas' erroneous opinion in his Emotion and Meaning in Music (Chicago, 1956).

Example 2.

a)



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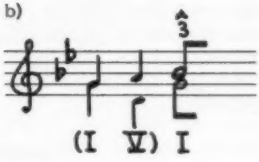
Example 3.

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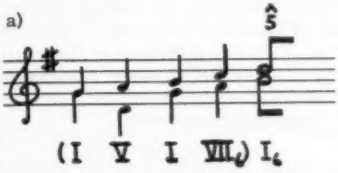
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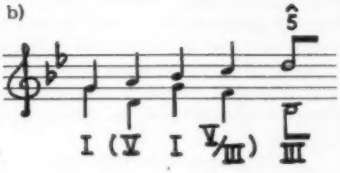
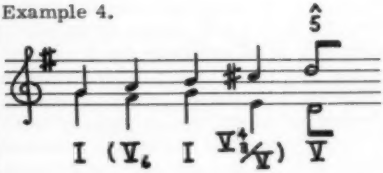
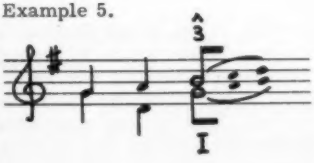

Example 4.



Example 5.



nature of the bass and inner voices (chords) which support the upper voice; (3) the duration of the motion (with respect to tempo, note-values);[25] (4) when $\hat{5}$ is the final tone, the mode. The coherent completion of the space-opening prefix depends upon a motion-tendency usually taught in elementary strict counterpoint: the tendency for a given melodic tone to progress upward or downward to the diatonic tone adjacent to it at the distance of a semitone, provided that the setting (bass and chord) affords proper support, and, of course, in consideration of the functional relationship between tonic and dominant degrees, which may modify this tendency. In amplification, there follows a brief account of the conditions necessary for space-opening motions to $\hat{3}$ and to $\hat{5}$.

Ex. 2 presents models of unprolonged space-opening motions to $\hat{3}$. In both modes the bass and chords which support the ascending motion are I-V-I. Observe the horizontal interval succession in the upper voice of Ex. 2 (major mode); two whole steps. In the absence of semitones, the passing-tone A thus serves to connect G and B without tending strongly toward either one (except insofar as a slight preference is given to the tonic G, the point of melodic closure). But in the minor mode, Ex. 2b), we encounter a different situation. There the horizontal interval succession contains a semitone between the passing tone A and $\hat{3}$. This semitone connection therefore tends to make the ascent to $\hat{3}$ stronger, more coherent in the minor mode.

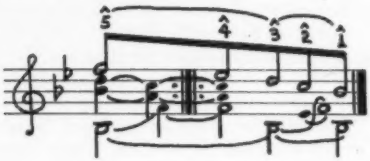
The space-opening motion to $\hat{5}$ entails more problems. In place of the second degree, the fourth degree serves as the connective to the final tone. In the minor mode (Ex. 3b) this degree stands at the distance of a whole tone from both the third and fifth degrees. Thus, there is no obstacle to a strong ascending connection from 4 to $\hat{5}$, provided, of course, proper support is given by bass and chords, such as is shown in the model. However, in the major mode (Ex. 3a) the fourth degree stands at the distance of a semitone from the third scale degree and thus tends to relate <u>downward</u> to that tone, rather than upward to $\hat{5}$. A space-opening motion to $\hat{5}$ therefore requires that the fourth degree be chromatically raised to create the necessary semitone connection between 4 and $\hat{5}$. This chromatic inflection is usually supported by a secondary dominant chord, so that the vertical situation at the conclusion of the motion is $\frac{5}{V}$ (Ex. 4). You may ask how one accounts for a motion of this kind in the major mode which ascends to the fifth degree, but which does not include the raised fourth degree. Ex. 5 provides the answer: the motion is then read as a space-opening to $\hat{3}$, followed by a prolongational motion within the third above $\hat{3}$.

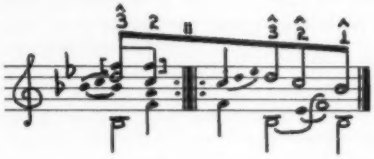
It appears that Schenker was somewhat aware of the problem of the space-opening motion to $\hat{5}$ in the major mode, for in <u>Der Freie Satz</u> he makes the following comment: "The space-opening motion to $\hat{5}$ is particularly well-suited to the employment of the raised fourth degree. By this means the $\hat{5}$ achieves a special effectiveness, especially when the chromatic alteration in the foreground results in a modula-

25. This motion presents no problems when it is executed rapidly and receives no support from bass and chords.

tion[26] to the key of the dominant." However, he did not realize that the alteration constitutes a necessary condition for the motion. This particular deficiency in Schenker's work may serve to explain an instance of an incorrect and somewhat arbitrary reading, his analysis of the well known Air in B-flat by Handel, which first appeared in Der Tonwille in 1924 and was subsequently included in abbreviated form in Der Freie Satz where it is used to illustrate both a special foreground melodic technique (unfolding) and also uninterrupted, or one-part form.

Example 6.



Example 7.

Ex. 6 presents the minimal sketch which Schenker used in Der Freie Satz (Fig. 103, 6). Directly below this, in Ex. 7, I have constructed a different sketch of the same work, which, on the basis of the conditions set forth above for the space-opening motion to $\hat{5}$ in the major mode, is a more accurate representation of its structure. A brief comparison follows. In Ex. 6 (Schenker's sketch) the first tone of the fundamental line is $\hat{5}$; in Ex. 7 it is $\hat{3}$. His misreading is to be attributed to his failure to recognize that the motion to $\hat{5}$, lacking the raised fourth degree, is not conclusive. But, having decided that the fundamental line operates within the space of a fifth, he then forces his reading to conform. He locates the descending passing-tone $\hat{4}$, which is required to close the fundamental line, on the third beat of m. 6, and thus shows an uninterrupted descent: $\hat{5}$-$\hat{1}$. Compare Ex. 6 with Ex. 7. The latter shows a space-opening motion to $\hat{3}$, not to $\hat{5}$. The triadic fifth degree is represented directly above the main melodic tone $\hat{3}$, and enclosed in brackets to show that it belongs, conceptually, in the register an octave lower. After the double-bar, C undergoes a diminution, which spans the third, C—E-flat. This E-flat (m. 6) serves as an upper adjacent tone to the restated $\hat{3}$ which follows. According to Schenker, the E-flat in question is the passing-tone $\hat{4}$ in the descending fundamental line, clearly an erroneous reading, since it is exclusively an adjacent tone in the foreground. Whatever passing-tone implications it may have are so weak as to be inconsequential. Therefore, on the basis of this reading, the form of the piece is two-part ($\hat{3}$-$\hat{2}$ $\hat{3}$-$\hat{2}$-$\hat{1}$), not one-part as Schenker maintained.

It is to be hoped that, as Schenker's work becomes more widely recognized, serious music theorists will make further applications of

26. By "modulation" Schenker means "tonicization," which is conceptually quite different from the erratic changing of key usually designated by the former term.

his ideas.[27] With the view to indicating the direction such applications might take, I should like to devote the following paragraphs to a discussion of five unsolved problems in music theory, indicating in each case how Schenker's ideas could contribute toward a solution. Four of these deal with music written prior to 1910,[28] and a single, but very important general problem involves music written after that year. Here, then, are the five problems:

1. Constructing a theory of rhythm for tonal music.

Hardly any aspect of tonal music is more obscure than that of rhythm. To be sure, we have a number of studies on the subject, but for the most part they are lengthy descriptions of obvious surface events, which take prosodic practices or exotic music as points of departure, or metaphysical treatments which have little significance to the theorist whose proper concern is with the structural role of that which we ordinarily designate as "rhythmic," those relationships which determine the temporal ordering of compositions. (There is, of course, a certain amount of verbal self-deception involved in the separation of rhythmic from tonal events.)

Schenker's work in the theory of rhythm was fragmentary and oftentimes obscure; yet the basis of his thought, particularly as expressed in Der Freie Satz, is clear: the concept of structural levels. Consider, for example, these unique and provocative statements:

> In the fundamental structure, rhythm exists no more than it does in a cantus firmus exercise.
>
> Only when linear progressions arise within prolongations in the upper and lower voices of the middleground does it become necessary to counterpoint the voices against each other in a rhythmic ordering. All rhythm in music comes from counterpoint, only from counterpoint.
>
> In the middleground every individual sub-level has a unique rhythm which is in accord with its contrapuntal content. Thus rhythm progresses through various prolongational stages until it reaches the foreground, just as do meter and form, which also represent consequences of a progressive

27. The extent to which Schenker's ideas have already been absorbed, perhaps unconsciously in some instances, is truly remarkable, particularly in view of the failure of his work to gain acknowledgement. When, for example, Mr. William Reynolds writes of the possibility of "reducing the melody to a more skeletal background in which the actual structural linear movement is laid bare," and points out that "many melodies may be bi-linear or even poly-linear," surely we can detect Schenker's influence. (William Reynolds, "Re: Unity in Music," Journal of Music Theory, II:97-104.)

28. I have selected 1910 as the approximate year when such major composers as Stravinsky, Bartok, and Schoenberg began to abandon the system of triadic tonality in their works.

contrapuntal differentiation.[29]

Schenker's highly significant observations suggest the following questions, which might well serve as points of departure for extended studies in rhythm: (1) At what structural level do rhythmic events begin to determine the tonal structure of a given work? (2) What is the nature of the relationship between the constituent rhythmic levels in a given work? Clearly, the analytic techniques developed by Schenker would be indispensable to the answering of these questions. And his structural concepts would be invaluable, if, as one might reasonably expect, such investigations were to lead to the formulation of a general theory of rhythm in tonal music.

2. Determining the sources and development of triadic tonality.

A technical history of triadic tonality has yet to be written.[30] When it is, it will have to demonstrate historical continuity in other than poetic terms. Again, here, the concept of structural levels is invaluable. If, for example, it can be shown that underlying structural levels in works from various periods carry similar tonal events, and that these have undergone an orderly transformation, a major step will have been taken toward the establishment of the convincing historical picture which is now so clearly lacking.[31]

Within this large problem are smaller ones. For example, the development of chromaticism has not yet been traced in any detail. The facile generalizations which have circulated for years in the musicological literature and the statistical studies of chromaticism which are based upon very rudimentary concepts of musical structure offer little of value to serious music theorists.

Schenker, particularly in his Jahrbücher and in Der Freie Satz, laid the groundwork for fruitful studies in chromaticism. Indeed, his fundamental principles have already been accepted — but not acknowledged — by all but the most atavistic circles. Thus, it is now generally recognized that the meaning of a particular chord is dependent upon its function in a particular context. But it has not yet been widely recognized that Schenker long ago specified the functions of various contexts.

29. Der Freie Satz, par. 21, my translation.

30. To the best of my knowledge there are only two books which deal directly with this subject, and they only in part: Felix Salzer, Sinn und Wesen der abendländischen Mehrstimmigkeit (Vienna: Saturn Verlag, 1935) and Armand Machabey, Genèse de la Tonalité Musicale (Paris: Richard Masse, 1955). Schenker's own treatment of the subject is, in my opinion, desultory.

31. Felix Salzer's Structural Hearing (New York: Charles Boni, 1952) and Adele Katz' Challenge to Musical Tradition (New York: Alfred Knopf, 1945) both contain information pertinent to this problem. A striking instance of Schenker-derived analytic technique revealing a unique relationship between works of different periods is to be found in Ernst Oster's article, "The Fantasie-Impromptu: a tribute to Beethoven," Musicology, I:407-29.

Even with regard to diatonic chords, Schenker early in his career recognized the necessity for clearly differentiating harmonic from contrapuntal functions. In his counterpoint book (1911) he drew the following sharp analogy to those theorists who are unable to make this distinction:

> We are all familiar with the way a child carries on with its doll. Now the doll is this or that friend, now an aunt — in short, everything that the child needs for its play is represented by the doll. The child speaks to the doll and receives an answer (one, of course, provided by itself). The theorists who write "harmony textbooks" carry on in the same way with their "tone-dolls." Here the doll represents this or that "degree progression," now only a suspension, here a "harmonic degree," there this or that voice-leading, in short, to everything that they demand, and in whatever condition they demand that it be, their tone-dolls answer, yes![32]

3. Gaining information about compositional technique.

As long as the only determinants of compositional choice are thought to derive from the composer's desire to achieve a balance between "unity" and "variety" or some other similarly profound impulse, very little information about his technique can be gained. As a result the serious student is often led to believe that the composer's technical grasp of music is either quite ineffable or is "obvious," even "mechanistic," and he remains unaware of that which can be gained from a deeper study of compositional problems. The composer stands to benefit from information about compositional determinants not so much by making direct applications to his own work as by coming to understand how underlying structural forces shape compositions, what it means for a work to begin to establish its own terms, its own conditions. To the non-composer such knowledge is also advantageous. He becomes more aware of the unique characteristics of the work, he comprehends the reasons for deviations from an established pattern, unusual rhythmic occurrences, etc.

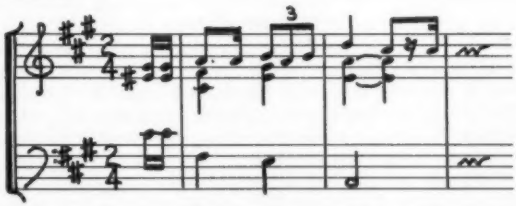
Unfortunately, Schenker's views regarding compositional technique often have been misunderstood. Because he writes freely about compositional choice, occasionally drawing inferences with respect to the way in which ideas develop, he sometimes offends those who for one reason or another deal with the problem of compositional choice only at the most trivial level. But although he did not hesitate to set forth requirements for a good composition, he did not presume to tell anyone how to go about composing. And despite the implication of its title, Der Freie Satz (free composition) is an instructional book not on composition, but on analysis. Let there be no doubt on this point, Schenker was outspokenly against any efforts to use the concept of fundamental structure for the purpose of composing music. To him, music study, represented at the highest level by analysis, makes an essential contribution

32. Kontrapunkt (Halbband I), p. xiii.

to composition, but the latter activity lies only in the province of the gifted and is essentially unteachable.

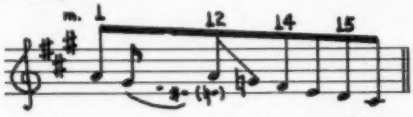
Schenker approached compositional problems mainly through the principles of strict counterpoint, in the conviction that these underlay the intricate works of the major composers. This belief was supported by his knowledge of the training received by Haydn, Mozart, Beethoven, and others. Nowhere is this fundamental aspect of Schenker's thought more apparent than in the first and third sections of Der Freie Satz, which comprise a condensed reinterpretation of principles formulated years earlier in Kontrapunkt.

With the aid of this methodologically valuable norm, Schenker was able to investigate many aspects of compositional technique which otherwise would have remained inaccessible. Again and again he demonstrated that foreground detail, with its multiple meanings, could be understood only in relation to the middleground and background, which provide definition in accord with the principles of strict counterpoint. As a study technique he occasionally considered alternate solutions in order to reveal compositional determinants more clearly. To illustrate this, I shall undertake to explain the structural factors which determined Schumann's choice of the secondary dominant (A_7) chord in mm. 12-13 of his song analyzed earlier (Ex. 1). (To avoid misunderstanding, I point out that this discussion is not directly related to Schenker's sketch.) In view of the strong tendency of the preceding C-sharp-major chord to progress and an F-sharp-minor (VI) chord,

Example 8.

the A_7 chord seems abrupt, has the effect of a discontinuous element, and therefore requires special explanation. True, it leads to the upper-voice adjacent tone, D, an essential foreground element which, in accord with the rhythmic pattern already established, as well as with the consistent association of the adjacent-tone motive, D—C-sharp, with the verbs in the poem, must occur on the downbeat of m. 13. But, as shown in Ex. 8, the alternate solution, this tone could also be reached without the aid of the A_7 chord. This indicates that the upper voice did not determine the choice of the A_7. When the alternate solution (Ex. 8) is considered, the more important function, hence the raison d'être of the A_7, becomes clear. This alternate passage omits the A_7 but retains the essential features of its immediate context: the preceding C-sharp chord and the upper-voice D which follows it. The alternate begins by fulfilling the tendency of the C-sharp chord to resolve to F-sharp minor. From there it moves through an E chord back to $\frac{3}{I}$ in m. 14.

What features of the original passage are most noticeably missing from the alternate? First, it is apparent that the upper-voice D on m. 14 lacks the support of the IV chord, which was impossible to reach logically beginning from the VI. But the most striking omission in the alternate version is the chromatically descending inner-voice, which, in the original version, begins with the G-sharp carried by the C-sharp chord, moves through A to G-natural in the A_7 chord, descends to F-sharp—F over IV, and finally moves through E to D—C-sharp over V_7-I. Observe that this striking inner-voice line concludes in m. 15 with a statement of the characteristic upper-adjacent-tone motive.[33] We can therefore infer that Schumann selected the A_7 chord in question not only because of its secondary-dominant relation to the IV at m. 14, but primarily because the A_7 chord carries G-natural, an essential component in the long descending line just described. Using Schenker's concept of structural levels as a criterion we can therefore say that the contrapuntal-melodic reason for the A_7 chord is more important here than the harmonic (fifths relationship) reason. Obviously, expression of the secondary-dominant relationship does not require the presence of the seventh, G; but by "more important" I mean here that G is a component in a configuration which belongs to a higher structural level

Example 9.



than does the secondary-dominant relationship.[34] In amplification of this, Ex. 9 shows how the inner-voice component A is stated at the beginning of the song, prolonged by the lower adjacent 7 tone, G-sharp, in the middle section, then in m. 12 begins the descent to C-sharp. In Schenker's terms, this linear progression is the composing-out of an interval, not a random interval, but in this case the composing-out of the sixth, A—C-sharp, the inversion of the triadic third which controls the upper-voice motion of the entire song. This third, stated vertically at the very outset of the piece, is also expressed in the bass succession, III-I, a means of associating the outer voices at all levels.

In attempting to ascertain the major compositional determinant in this instance, I do not disregard the influence of the form of the poem and its internal associations. Doubtless Schumann wanted to set the words, und vor deinem, which begin the last section, with the same C-sharp used at the beginning with the words, aus meinem. Also I do not overlook the fact that the chromatic descent of the inner voice in the final measures repeats the inner-voice and bass diminutions of the middle section, an additional means of unification.

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33. As in mm. 3-4 (7-8) Schumann here requires the accompanist to interlock the hands in such a way that this motive is naturally stressed.

34. Here I disagree with Schenker's sketch, which shows the A_7 chord supporting $\hat{3}$. In my opinion $\hat{3}$ is supported by the tonic triad in m. 14.

Not only are Schenker's concepts and techniques valuable in the study of such details in completed works, but they also provide the means for interpreting compositional sketches, rough drafts, revisions, notated improvisations, etc. For example, many of Beethoven's otherwise perplexing sketches become clear and significant when they are examined with reference to a thorough structural analysis. At present a large amount of such material awaits investigation by music theorists.

4. Improving theory instruction.

We all recognize that the serious student of music today is faced with an enormous task. He is expected to know the literature and structure of the music of the past, as well as the ever increasing literature of the present with its diverse and often problematic compositional systems. In order to relieve this situation we would do well to emulate science education, where, thanks to the continual refinement of concepts, students cover traditional material more and more efficiently. In my opinion, the intelligent and serious music student could cover the basic, traditional curriculum within two years, and then go on to more advanced studies in music of all periods — provided the instructional methods and concepts used were adequate to the task. Here Schenker has much to offer. Consider, for example, the unreasonable amount of time ordinarily spent on the relationship between fugal subject and answer. But when these are regarded as thematic expressions of the tonic-dominant relationship — within a single key[35] and when necessary adjustments in the answer are explained in terms of relationships between structural levels, the student quickly grasps the underlying principles and is able to cope intelligently with details. Instruction of this kind, extended to all aspects of traditional theory, could lead to far greater efficiency without sacrificing thorough coverage.

In more general terms, ineffective theory instruction often can be attributed to a failure to recognize the importance of non-consecutive relations. The student's hearing is directed only to the immediate connections in the foreground, which provide an exception to every rule, and he soon comes to feel that concepts derived from his theoretical studies are incapable of explaining with any degree of precision the organization of actual compositions. Schenker has suggested that Brahms so vehemently repudiated his formal studies for this very reason. He makes clear that the significance of Brahms' collection of examples of parallel fifths and octaves[36] lies in the composer's recognition of the contradiction between a theory which dealt with immediate relationships only, often of a transient nature, and his own highly refined sense of hearing which encompassed large spans.

5. Understanding the structure of problematic modern works.

It is no secret that Schenker detested modern music. Indeed, his

35. The notion of "modulation" is particularly confusing to students here.

36. Johannes Brahms, Octaven und Quinten, edited by H. Schenker (Vienna: Universal, 1933).

concern about the current state of affairs in music seems to have been an important motivation for all of his writings. At the beginning of the first volume of his Kontrapunkt (1910) he declaims:

> We stand before a Herculaneum and Pompeii of music; musical civilization is obstructed! The tonal material itself is destroyed, those essentials of music which were created by artists, who, working with their own resources, went far beyond the meager indications of the overtone system.[37]

Nor did time modify his opinion. Some sixteen years later in Jahrbuch II he undertook an analysis of a passage from Stravinsky's Piano Concerto, concluding:

> My analysis gives me the right to say that Stravinsky's work, despite its slight suggestions of linear progressions, which has to do with the folk-like elements it contains, is altogether bad, inartistic, and unmusical.

In view of these and other statements, it seems contradictory that Schenker's work should contribute significantly to the solution of certain problems in advanced contemporary music. Yet, his general concept of structure, apart from his specific formulations of triadic tonal events, lends itself to modern thought regarding music.[38] For example, the idea of the "totally organized" work, now become quite fashionable, was clearly set forth by Schenker (but without reference to Webern!). He even recognized the structural role of orchestration and demonstrated this in his analyses, notably in those of the Scherzo to Beethoven's Third Symphony and the G-minor Symphony of Mozart. Relevant to this, he writes in Der Freie Satz:

> In the masterworks, orchestral colors are not combined according to (the composer's) mood, and applied haphazardly. They are subject to the laws of the total composition.[39]

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37. Schoenberg, in the first edition of his Harmonielehre (1911), took exception to this as follows: "Dr. Heinrich Schenker (I hear) writes in a new counterpoint book of the art of composition, and maintains that no one can compose any longer. Certainly Dr. Schenker is a thinker whom one must take seriously, (even though nothing correct is to be gained from it), for he is one of the few who strive for a system. And if he makes the same mistake as others, one must nevertheless value him for other merits. But what he says is hardly better than the remarks of the senile about 'the good old days!'" In the 1922 edition Schoenberg changed his remark about "nothing correct to be gained" to read "although he brings nothing to full clarity." Schenker reciprocated by attacking Schoenberg's Harmonielehre in Jahrbuch II (1926).

38. Roger Sessions recognized this as early as 1935 when he wrote: "Although Schenker remained bitterly hostile to all that is contemporary in music, his work and his ideas nevertheless embody very clearly certain aspects of contemporary musicality..." ("Heinrich Schenker's Contribution," Modern Music, XII:170-8.)

39. Der Freie Satz, 2d edition, 1956, p. 34. (My translation)

More specifically, Schenker's theory established two basic requirements for analysis which are applicable to modern music: first, an analysis should undertake to explain the essential relationships within a composition, their genesis, ordering, interaction and relative importance to the parts and to the whole of the work; second, as part of the analytic undertaking, a representational means and vocabulary should be developed which are in accord with the unique characteristics of the work.[40]

But beyond these values — the point of view and the general requirements — Schenker's theory offers a specific study-tool, the reduction technique, which can be used to good advantage in analyzing certain modern works.[41] The long-range goal of such analytic studies should be kept in mind. If it can be demonstrated that contemporary compositions, particularly those of the problematic 1910-1925 period, reveal significant similarities at other than the surface level, and if these similarities can be interpreted in an orderly fashion, while at the same time accounting satisfactorily for differences, a beginning will have been made toward a genuine technical history of contemporary music.

Many of the works composed during this period have achieved the status of standard repertoire items, insofar as a modern work can achieve that status. And yet, by and large, even these "standard" works are little better understood now than they were at the time of their composition.[42] It has been demonstrated that Schenker-derived concepts and techniques can be used to good advantage here, provided each work is examined in its own terms. This means that, even though Schenker's concept of structural levels is used, the general content of each level cannot be predicted, as it can in tonal works where we know in advance the underlying organizational principles and the function of detail.

Obviously there is a danger of reading triadic characteristics into a work which is based upon non-triadic premises. Therefore, the

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40. Schenker was aware of the problem of verbalizing about music. In Der Freie Satz he remarks: "As a verbal connection, a name always indicates at once a logical connection and an essential unity." Thus, he rejected the terms "melody," "motive," and the like, because he felt that they lacked significance with respect to more comprehensive events such as "fundamental line."

41. Applications to modern works have already been made in the books of Salzer and Katz cited earlier and in Contemporary Tone-Structures by the present writer (New York: Bureau of Publications, Teachers College, Columbia University, 1955).

42. The familiar terms, "atonal," "polytonal," etc., do not constitute explanations, but are merely labels, somewhat shopworn, which usually serve only to obscure really significant structural events. Unfortunately, the currency of these terms has given them the aura of genuine technical language with the result that many people, even some musicians, are under the impression that the organization of contemporary music is fully comprehended.

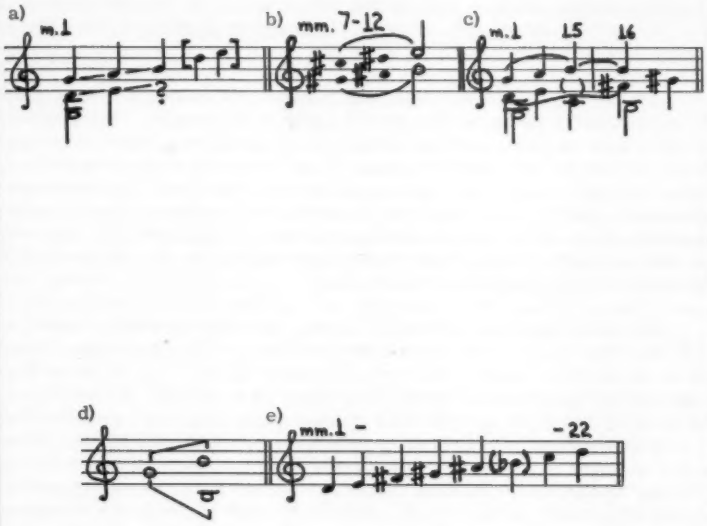
initial problem in the analysis of a work from the period under discussion is to discover a clue which will reveal its basic structural terms. To illustrate the application of Schenker-derived techniques toward the solution of this problem, I present here a partial analysis of Debussy's La Cathédrale Engloutie (1910), a work which is familiar and relatively uncomplicated, but which deviates considerably from triadic norms, despite certain external triadic characteristics.

A careful examination of the first measure, in the course of which all doublings are eliminated to show the basic components in their most condensed form, yields an incomplete succession of parallel fourths above a sustained "bass" note (Ex. 10a). The fact that the lower line in this succession is incomplete compared to the upper, suggests that it will eventually complete itself, that is, E will ascend to F-sharp, thus paralleling completely the motion of the upper voice. This provides a clue, at least, to the melodic structure. The tendency of E to ascend is strengthened with each repetition and with the placement of the succession D-E in the upper register at the end of every melodic group; yet the implied motion is not completed. At measure 6 the E achieves a certain stability, supported by the bass E, and embellished by C-sharp and D-sharp. To clarify the structure of this section, the melodic tones are arranged vertically, in accord with Schenker's concept of polyphonic melody. The result is a succession of parallel fourths like that at the beginning. This succession prolongs the central tones, E and B (Ex. 10b). Observe that, unlike the opening succession, the lower voice of the succession is complete.

At m. 13 the bass continues its descent, arriving at C. Following this, the initial parallel fourths succession is repeated (mm. 14-15), reinforced here by another parallel succession, A–B, added in the lower staff. Finally at m. 16, the melodic connection from E to F-sharp, suggested at the very outset, is completed, and as the inner voice ascends to F-sharp, the bass descends to B. Ex. 10c) summarizes the first section of the piece showing how the implied motion is ultimately realized. This sketch also shows that the F-sharp is followed by G-sharp, suggesting a further ascent by whole steps, which, of course, does occur.

A comparison of the horizontal and vertical intervals tells us something about the interaction of the various structural levels as the piece unfolds. A number of symmetries appear. To illustrate, Ex. 10d) represents the third within which the upper voice operates, and the sixth, its inversion which is simultaneously composed-out in the bass. In contrast to the thirds, which are associated with the horizontal unfolding at the middleground level, the vertical fourths belong exclusively to the foreground. The most active element in the composition, on the basis of this incomplete analysis, is the ascending inner voice which demands attention at the very outset. Ex. 10e) shows how it slowly unfolds a whole-tone progression over the span of an octave. Thus, to use Schenker's terms, the structural content of the upper voice at the middleground level is an ascending whole-tone scale.

There are diverse elements at the foreground and middleground

Example 10.

levels further on in the piece which require explanation before the background can be discussed intelligently. I shall not take time for that here, in the hope that the partial analysis already given has served its purpose: the demonstration of Schenker-derived concepts and techniques applied to problematic modern music.

It would be foolish to assert that Schenker's concepts and techniques can be applied with equal effectiveness to all music. For example, the reduction technique is not suitable for the analysis of 12-tone music, nor is it required there in order to explain structure. The 12-tone system has its own history, its own terminology and analytic technique.[43] Certainly, as music continues to be composed, performed, and studied, music theory is responsible for developing new concepts and new analytic procedures which will contribute toward the understanding of that music. But at the same time, we should recognize that the possibilities for applying Schenker's technique have by no means been exhausted.

There are those who feel that Schenker's concepts are of questionable validity because they do not apply to all music. The implications of such an unreasonable criterion are disturbing, since a general theory which would apply to music in the many periods even of occidental history, each with its own structural principles and extensive literature, would very likely be of such a rudimentary and primitive nature as to be — for all practical purposes — valueless. (It may well be that a theory of this kind is already implicit in the musicological literature of the past quarter-century.)

In many respects Schenker's work provides us with a model of what the work of the music theorist should be — one searches in vain for a comparable effort. And yet, Schenker did not regard himself as a theorist or as a musicologist, but rather as an artist. He has indeed the artist's traits of courage and perseverance combined with intellect and insight (which we also associate with the true scientist), traits which set him apart from the bigoted pedant who, all too often in Schenker's day, bore the name of music theorist. It is to be hoped that as his ideas are more widely understood and applied, the image of Schenker as a visionary will be replaced by one of a unique, original and highly gifted person. For the conceptual framework which he expounded, as well as for the vast amount of information about specific musical structures which he provided, he deserves recognition by all intelligent musicians.

43. Milton Babbitt has made original, highly significant contributions to the theory of 12-tone music. See, for example, his article "Some Aspects of 12-tone Composition," The Score, 12:53-61. Important work has also been done by George Perle. See his book review in the Journal of the American Musicological Society, X:55-59.

ON THE NATURE AND VALUE OF THEORETICAL TRAINING: A FORUM

David Kraehenbuehl: An Introduction

The papers which follow were read at a session of the theory-musicology section of the Western Division of the Music Teachers National Association held at the University of Montana, Missoula, Montana, on July 30, 1958. The four papers were prepared without any exchange of ideas between the four speakers, some of whom had no personal acquaintance prior to the meeting itself. In view of this, there is a remarkable and spontaneous unanimity among the speakers which points up a verity regarding the nature of current theoretical instruction in our universities, colleges, and conservatories: it is almost valueless for the active participants in the world of music, not to mention the interested bystanders. It is also interesting to note how, although their specific suggestions for improvement may differ, the speakers' outlines for a theory program of real value are similar. They are all immensely concerned that theory should answer the questions: "What does it do?," or "How does it accomplish what the listener experiences?," rather than the more obvious and most common question in theory courses: "What is it?" They are particularly concerned that these important questions should be answered with regard to the music of our own century and, because our own century recognizes and utilizes the styles of many past centuries, for these also. It should be understood that the latter endeavour comes about only as a necessary corollary to the former.

None of us, not even the most recent graduate in composition, performance, or musicology, needs reflect long to realize that only a small part of his theoretical training measured up to the general design given above. For this reason theory has fallen into a state of almost universal academic disgrace. In many schools, it is the program in which those unfortunates who have failed in every practical musical activity are placed; in others, the hours devoted to it, obviously a waste, are quite reasonably pared down; in still others, it is continued as a kind of traditional housekeeping service which no one has had the courage to improve or eliminate.

These last two verbs cover the situation succinctly. If theory instruction cannot be improved along the general lines indicated above and the particular lines indicated in the following papers, it deserves to be eliminated. That it is already eliminated in the minds of many performers is evidenced by the fact that Mr. Fletcher, in speaking for the performers, must begin with a general theory of performance which demonstrates the necessity for any theoretical training at all for the performer. That it is already eliminated in fact for many music educators is evidenced by the extensive reduction in curricular hours devoted to theory as reported in Mr. Weigel's account. Mr. Stevens' insistent plea for vital theoretical training for the composer suggests

that many composers and teachers of composition have found elimination the best solution to the current wasteful hours spent with "inert ideas" in music theory classes.

Such a negative report on current theoretical instruction would suggest that the speakers are either fundamentally hostile to music theory as an approach to music or hopelessly idealistic. Their own words would belie the former. However, they are clearly hostile to much of the theoretical instruction they received and observe their present students receiving. They are certainly for improvement. Perhaps, then, they are too idealistic, demanding too much or too radical improvement. This seems unlikely. Every speaker, although each speaks for only one special area of musical activity, is an accomplished professional composer, performer, music educator, and, certainly, listener. Through these manifold activities, each has ultimately found his own way to a vital understanding of music. Each feels that a vital approach to music theory would contribute to any and all fields of musical specialization. Surely, if a group of individuals with such extensive practical backgrounds find current programs of theoretical instruction wanting, theorists would be wise to heed well their suggestions for improvements. Many will not. All too many inadequate teachers of theory (and, unfortunately, these represent the profession of music theory for many practical musicians) will fall back on the long-standing but adolescent argument, "But you just don't understand." To this we can only reply, together with our speakers, "Perhaps you haven't made yourself clear."

If the profession of music theory is to regain any of its lost status, it must ruthlessly weed out the incompetents, the purveyors of "inert ideas" and academic poppy-cock who have brought it to its present sorry condition. On the positive side, music theory and theoretical instruction must be centered in the present, deal with the music of the present, and, most important of all, deal with the immediate experience of the music it seeks to explain. Music is not composed nor performed to demonstrate a theoretical principle. Nor does a theoretical principle explain anything more than the specific body of music that gave rise to it. Theories of real value deal with the moment and must be constantly revised as new musical moments develop. Such a dynamic theory would always be welcome in the training of any practicing musician. That theory is currently regarded as a waste of time or, at best, a rather inefficient form of mental discipline, is vivid proof that theoretical training has long been out-of-step with the present. If it cannot get in step, it will be ultimately and rightfully eliminated from music curricula. It is in the belief that such a final step need not be taken that our speakers make their proposals.

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Halsey Stevens: For the Composer

The dichotomy between theory and composition is a relatively recent phenomenon. Not too long ago the theorists were customarily composers; the names of Gafurius, Praetorius, Zarlino, Rameau come quickly to mind. That is not to say that all composers were necessarily

theorists, nor that the most important writings on theoretical problems were the work of the most important composers. But the theorist who did not create was anomalous; to write about music without first-hand experience in composition was unthinkable.

In our time the composer-theorist is comparatively rare. Hindemith and Schoenberg are almost the only significant 20th-century composers who have published theoretical works of any consequence.[1] There are no theoretical writings of Debussy, Ravel, Bartók, Stravinsky, or Webern. It is perhaps revealing that none of these composers ever showed interest in teaching either theory or composition.

Nor are there such writings of Mozart or Haydn, of Beethoven or Brahms. But it must not be assumed that these composers lacked interest in, or were ignorant of, the theoretical basis of music merely because they left the analysis and theoretical interpretation of their music to the searchers-out of consecutive fifths who took over the field in the 19th century. During this whole period, and even to the present day, the theorist and the composer appear to have little in common. The theorist who was unfortunate enough to live past the turn of the 20th century, confronted by the explorations of Debussy and later schools, became a sort of antiquarian, meticulously preserving the remains of the past and simultaneously prohibiting any commerce with the present.

Too often theorists and teachers of theory — they are not necessarily synonymous — lose sight of the fact that a theory of music is simply an average of common practice over a greater or a lesser period of musical history. No composer worthy of the name would consider himself bound by the restrictions of the theory books, which, like dictionaries, go out of date the moment they are completed. On the other hand, the antiquarian-theorist frequently betrays his resentment that composers of his own time refuse to fit the Procrustean bed he has so painstakingly prepared for them by taking the measure of big and little composers of the past and averaging their proportions. Theorist and composer are often so antagonistic that when we find any real communication between them we may echo the sentiment of Mephistopheles in the Prologue of Goethe's Faust:

> Es ist gar heubsch von einem grossen Herrn,
> So menschlich mit dem Teufel selbst zu sprechen.

Which is the Lord — composer or theorist — and which the Devil depends entirely upon the point of view.

Composers of the present are likely to disdain theorizing about their own or other composers' music. Yet every composer must at some time have come to grips with the problems of theory as it affects his creative thought, though it is conceivable, as Hans Jenkner says, that he may have "fulfilled the law [of music] without ever grasping it

1. Sessions and Piston have produced useful didactic works on traditional harmony and counterpoint; and Krenek, a small book on the 12-tone technique.

rationally."[2] It seems likely that the intuitive organization of musical materials is on shaky ground if it is not based upon a thoroughgoing theoretical discipline. We have seen in our time the formulation of creative systems which, though they require a skilled and gifted composer for full effectiveness, make possible the production of music of a sort by the veriest novice. Such systems, taken as short-cuts, lead to dire results. The young composer who believes that it is possible to build upon the procedures of his own time without reference to those of the past deludes himself; he cuts off his own roots and can put forth only a tentative growth deficient in chlorophyll. The avant garde in which he professes membership is one without background.

In turning our attention to the subject of "Theory for the Composer," it is assumed that we are to concern ourselves with the needs of students preparing for professional careers as composers. It might be maintained that the materials of which music is made — pitches, rhythms, timbres, even harmonies — surround us constantly and have only to be chosen and organized into new and original patterns. But it is not easy to be new and original and still comprehensible.

"Music, more than any other art," says Frederick Goldbeck, "is born under the law of tradition. The composer's chords are every dead or living composer's chords, never his own."[3]

How much of the tradition should we expect the aspiring composer to assimilate? Certainly as much as is necessary for understanding fully the music of all periods, and especially for perceiving the relatively unchanging principles of musical creation, as well as the personal variants that distinguish one composer from another. That is to say, he will have a working acquaintance with all kinds of music, from the monodic period on, and be able to write acceptably in any of the historical styles. He will not commonly make use of these styles except for disciplinary purposes, but in his original composition he will be able to draw upon their elements for use in the formation of his own expressive vocabulary.

Not long ago it was the custom to offer basic courses in theory, the same for all music students, which dealt with traditional diatonic and chromatically-modified diatonic harmony. The period covered was roughly the 18th and 19th centuries, with emphasis upon the latter. Materials for analysis and resynthesis, whether in written or keyboard form, as well as for solfège and dictation, were drawn exclusively from this period. At a later point in the student's training he was exposed to species counterpoint, which purported to reveal the secrets of 16th-century practice, and to what passed for the polyphonic practice of Bach. Knowledge of analytical techniques was to be gained

2. In Allgemeine Musik Zeitung, December, 1936; quoted by Oswald Jonas in his Introduction to Schenker's Harmony (Chicago: Univ. of Chicago Press, 1954, p. vii).

3. In Music Today; Journal of the International Society for Contemporary Music, ed. by Rollo H. Myers (London: Denis Dobson, 1949, p. 110).

by dissection of the Beethoven piano sonatas only. As for orchestration, scoring the Russian Hymn for various instrumental combinations could be expected to prepare the student for all contingencies.

Even today I find that many students, graduates of reputable institutions, with degrees in composition, are no better prepared for the exercise of their craft than this. Many have no training in or experience of plainsong; others have only the vaguest notion of modal scales. Yet plainsong and the modes have played fertilizing roles in the music of the 20th century, and it appears obvious that acquaintance with them is fundamental to understanding.

The same is true of 20th-century procedures themselves, about which few are willing or qualified to theorize. The assumption is that these procedures derive so remotely if at all from those of preceding periods that one cannot connect them rationally enough to justify studying them in class. But most of the important manifestations of 20th-century music descend demonstrably from earlier practices, and it is short-sighted to exclude them from the curriculum through inertia or the inability to discover the relationships that exist.

We may, I think, take it for granted that the composition student is, of all music students, the one who needs the most intensive training in the various aspects of musical theory. Skimped foundations are likely to result in organizational inadequacies. No student can be taught to have musical ideas; but he can be taught how to realize the implications of such musical ideas as occur to him. This can hardly be done through the superficial and backward-looking instruction many of our young composers are still getting.

I suggest the following as essential points in the training of the student composer: first, acquaintance with the melodic, harmonic, contrapuntal, and formal principles of representative music of all periods, from plainsong to the present; and second, experience in the solution of melodic, harmonic, contrapuntal, and formal problems in the principal historical styles.

The more extensive the acquaintance and the experience, the better equipped the composer. By its nature composition is, to a certain extent, eclectic. A kind of music which does not borrow from other music is almost unthinkable; it would have so little in common with the music normally heard in concerts that points of relationship would be difficult or impossible to establish.

The easiest thing in the world is to borrow the superficial mannerisms of a composer. These are the devices by which he puts his personal stamp upon his work, and they are usually out of place when encountered in the music of another composer. Music journalists like this kind of borrowing, because it makes it easy to dismiss the new composer as a mere copyist. But the mannerisms of a composer are generally in his music because they have a fundamental relationship to the musical organism, though they may play a coloring role only. Applied willy-nilly to a different sort of musical organism, they lose their

pertinence and become merely incongruous.

To profit by the basic organizational principles of any composer's music presupposes a thorough investigation into more than its decorative elements. It is not too much to say that music could be written to take advantage of the basic principles of, say, the music of Beethoven or Brahms or Stravinsky, without "sounding" in the least like those composers. This would necessitate a careful analysis of the composer's musical thinking, as deduced from his writing, and a resynthesis which embodied the principles without copying the idiosyncrasies.

While it is possible to tabulate the characteristics of a single piece of music, or of all the music of a period, such a tabulation can do little more than suggest the character of the music. Naturally, each characteristic contributes to character; but the latter is somewhat more than the sum of its characteristics. In the last analysis, acquaintance with the theoretical basis of music must be made through the music itself. A single harmony is individually without value; it becomes meaningful only as it follows and precedes other harmonies and tends toward a specific and discoverable goal. A set problem in harmony or counterpoint acquires merit only in such measure as it approaches a musical result. The four-bar phrase out of context can provide little or no insight into the functioning of musical relationships. Mere "correctness" — which is likely to spring from a philosophy of avoidance — is of little importance; any student will be happy to provide examples of "violations" from the literature, in justification of his own ineptitudes.

The study of the various aspects of music as found in the music itself is not a new idea. It has had, and continues to have, adherents. The teaching of theory should be synonymous with the teaching of music, music as a living organism. Unfortunately this requires a specially gifted teacher, who can make his way through the maze of pre- and misconceptions that theory texts have perpetuated. He must be able to communicate, through reference to a wide selection of musical literature, a comprehension of how music functions. He must be able to demonstrate how each of its separable attributes contributes to the logic of its organization. And as each musical composition represents a "unique formulation of experience,"[4] he must be able to discover and make clear the fundamental similarities of apparently diverse phenomena.

The mechanics for such a procedure already exists in most schools. If to the solid block of time devoted to harmony and related skills (solfège, dictation, keyboard harmony) which cover the first two years of the college curriculum we add the time set apart for counterpoint and analysis, we shall see that there are some 28 to 30 semester hours available for theoretical study. The teacher scheduled to teach harmony or counterpoint or solfège usually holds rigidly to the material implied by the title of his course, and is reluctant to cross-refer to other aspects of music for fear of confusing his students. In the ab-

4. Copland, Music and Imagination (Cambridge: Harvard University Press, 1952, p. 41).

sence of such an artificial segregation he might be tempted into comparisons and analogies now denied him.

With the exception of a sphere, any object, held to catch the light and turned on various axes, displays innumerable facets, some of them extremely dissimilar. This is what may happen with a musical composition examined from differing points of view. We may investigate the chord types and inversions the composer uses, the methods of their connection, the rhythm of their succession, their spacing and texture, the relationship of their roots, the structure of the melodic line or lines they support, the shape of phrases, the quality of cadence, the contrapuntal interaction of the various parts, the balance of similar or dissimilar elements, the organization of the larger aspects of form, without exhausting the possibilities. All these things play an important part in the systematic investigation of music that we call "theory."

But all too often the theorist ignores the delicate system of checks and balances that gives meaning to music, and pursues only a single line of investigation.

> Both teachers and students usually plod along like those buffaloes or mules in primitive irrigation projects: their activities keep the region alive, but they themselves, blindfolded, follow one single narrow furrow, without sense of direction and purpose, never seeing the open world and the sun. And like those indispensable beasts they are not aware of their lack of direction and vision; they are satisfied with their mere technical function.[5]

Is this the sort of training we can afford to give to our student composers? Thus prepared, some few of them may ultimately acquire through their own efforts an understanding of the reciprocation that exists among the separable elements of music. For others the doors will remain closed. They may stumble upon a felicitous solution now and then, but they cannot consistently manage such a feat. On the other hand, as Schoenberg says, "a mind thoroughly trained in musical logic may function logically under any circumstance."[6]

It is inconceivable that a mind may be so trained through the compartmented approach to musical theory. If we are to fulfill our responsibilities to our student composers we must enable them to acquire the comprehensive understanding of musical processes that comes — if it comes at all — with recognition of the intimately reciprocal forces ever present in music.

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5. P. Hindemith, A Composer's World (Cambridge: Harvard University Press, 1952, p. 103).

6. A. Schoenberg, "My Evolution," The Musical Quarterly, XXXVIII:522. Underlines added.

Stanley Fletcher: For the Performer

If you open the catalogue of almost any American college or university where music is taught, you will probably find listed there several courses under the heading, Theory of Music. You may also find listed several courses classified as "Applied Music" — which means performance. This curious term, "applied music," prompts reflection, for it seems to imply that the subject "Music" which is being "applied" in performance exists primarily elsewhere — as some sort of platonic entity having a reality apart from the goings-on in studios and concert-halls. It seems to suggest that music is first of all an intellectual or theoretical study and that the theory and practice of music are separate by their very nature.

This notion was reflected in the past in the reluctance with which institutions of higher learning approached the inclusion of music in their curricula, and the uneasiness with which musical performance has finally been accepted into the list of subjects worthy of academic respect. The practice of music is still felt by some to be an activity somehow on a lower intellectual level than its theory. The idea is a relic of the Middle Ages, still surviving even in some academic halls that have already granted lodging to musical performance. Those of us who teach performance of music can walk as equals with the inhabitants of all but the Back Bays of the academic world; but we still have to cope with a large body of folklore entertained widely by the general public and some of our colleagues of the academic and even the musical profession, a folklore which assumes that musical performance makes no demands at all on the mental capacities of the player.

One very widespread notion allows only two qualifications for the performer: "technic" and "inspiration"; in other words, it would make the performer a sort of bastard son of a gymnast and a spiritualistic medium or witch. He simply practices, it is supposed, until his fingers "fly over the keys" with the requisite speed and accuracy, and then, at the time of performance, he is "inspired" to give the music the right "expression." Another school of thought would eliminate the witch and leave the gymnast in full charge of performance. There are performers who work on the first of these notions — the technic-inspiration or gymnast-witchery principle; and some composers, tired of the inspiration part which they take to be an unwarranted intrusion of the player upon their composition, believe they would like performers to be a sort of purely gymnastic mechanism, without the witchery. They have succeeded in persuading some performers that all that music needs is a mechanical reproduction of "what is indicated in the score" — loud when indicated, soft when indicated, crescendo or diminuendo when indicated. Such playing is rightly condemned by audiences as "mechanical," "dull," "meaningless," and — yes — "uninspired." They are justified in the protest; but the composers' protest against undisciplined "inspiration" is equally well-founded. Neither of these notions offers an adequate idea of what lies behind good performance and how the performer functions when he is using to the fullest his capacities as a man and musician in the service of a musical composition.

Most performing artists resent being reduced to a mechanism, and many also know that technic joined only to that elusive entity "inspiration" makes a treacherous pair to put in charge of the important task of performance. The performer has something in common with a gymnast, certainly, and at times he does seem to bewitch his audience. But there is a good deal more. The performer is the intermediary between two human beings, literally the "interpreter" between a composer and an audience. He must take the bare score that the composer provides and transform it into the living experience that the composer conceived and that the audience hears as the musical composition.

In these two folklore notions of what a performer does, the one I have called the gymnast-witchery notion, and the still more limited one that leaves out the witchery part, we have what might be called two primitive Theories of Musical Performance. I believe, as of course you have gathered, that they are both very bad theories; neither of them explains even in a general way what goes on in good performance. I am going to be talking about the other things that I do believe are involved in good performance of music but which these two primitive theories leave out. I am going to be presenting, at least in part, my own Theory of Musical Performance. "Music Theory" will come into my discussion, but I should declare at this early stage that the notion of "Theory for the Performer" which is my point of departure has, in my mind, a considerably wider scope.

The theory of an activity is, of course, how you think about it. It is the more or less organized set of ideas in terms of which you explain to yourself the operation you are dealing with, on what principles it is founded, and how you are going about what you are doing. If you think at all about what you are doing, and work out any organized set of principles by which you understand it, then that is "theory." The kind of theory you entertain will have a considerable effect on the way you do what you are doing. A player's performance is much affected by the way he thinks about performing. It is therefore worthwhile to consider how a performer thinks. If we consider what a performer of music is doing, and how he thinks about it, and try to explain it by an organized set of principles, then we will be concerned with the Theory of Musical Performance. The attempt to work into this general theory of performance an understanding of the music the player is performing will involve us in what is generally understood as Theory of Music.

Let us begin by considering a player in the act of performing a musical composition, see what is involved in his activity, and note some principles which may serve to make his occupation understandable. There are four obvious external elements that we can start with. There is the player himself, who is a complex and busy human being. There is his instrument (let us say a piano) on which he is playing. There is the score that was set down by the composer. And there is the audience for whom he is playing.

The score, the player's starting point, gives him a set of specifications for the performance of the composition in terms of pitch-relationships, patterns of tones to be sounded in sequence, some to be

sounded together. These are fixed requirements. Also given is the pattern of metrical relationships, the relative speed at which the tones must follow each other, measured on the scale of a regular underlying pulse. The speed of that underlying pulse a composer may indicate as a rate on the metronome. However, there may be some indications as to when the underlying pulse should speed up, or when it should slow down; and when this is to happen, the amount of speeding up, or the amount of slowing down, cannot be indicated exactly. The composer can indicate in general when the music should be loud and when it should be soft, but it is not possible for him to say precisely how loud or soft; nor is it possible for him to indicate, if the music is to grow louder, just how much louder it grows, and at what rate of increase; nor, when it is to grow softer, just how much softer, or at what rate of decrease. Furthermore, if several tones are to be sounding together there is little that a composer can write into the score that will give precisely what the dynamic proportions should be although this question is important to the effect of sonority.

Also in the specifications of the score there is one class of terms which do not refer at all to the objective and measurable characteristics of the sound event, such as loudness and duration, but to the emotional effect on the listener. Such terms are "maestoso," "amoroso," and "scherzando." Terms like these do not constitute a direction to the player in the sense that the rest of the score does. They are rather a kind of test to be used by him to determine whether he has appropriately gauged the elements which, because of the limited communicative power of the score, the composer could not make specific.

At best, the specifications of the score are meagre and limited, and there is much required in the performance of a composition that the performer must judge for himself. The how loud, and how soft, how fast, how slow; the how much louder, how much softer, the how much faster, how much slower; and the balance between simultaneous elements that determines sonority — these we may call the plastic characteristics of music in performance. These are the aspects of performance which depend on the judgment of the player, matters in which he must make up his own mind from the sparse clues a composer can give him. It is in this area of the plastic that a player exercises his art of performance. Dynamic proportions and rhythmic subtleties — these must be the contribution of the player to the composition as he performs it..

It is all-important how he derives his judgments on these matters. But before we go into this question, let us first consider the listener.

The listener may not be aware of the composer's score, for pianists play a good deal from memory. He will be aware of a player much occupied with his job, and of the large instrument and the sounds emerging from it and resounding in the music-room. He will be aware of the pattern of sounds rising and falling, expanding and contracting, changing and increasing and fading, now faster, now slower. Most important of all, he will find himself curiously compelled to listen and attend to them, and he will find his attention drawn to this or that element

in the patterns as they form and dissolve in his mind. Some passing events will recall previous ones, and his experience begins to organize, to have shape, design, form. He finds his emotions and perhaps his visual imagination becoming involved in the experience. There is a compulsion which takes hold of him, and something in him becomes strangely identified with things in the music which seem to live and move, as he may have found himself perhaps, while watching a play, becoming involved and identified with the actors and the events on the stage or screen. If the musical performance is successful, it will all somehow add up in his mind as the performance of a play adds up for him, so that when the last sounds have died away at the end, the total impression of the composition will stand as a whole in his mind, as a structure in sound that is somehow colored by the associations of personal experience which it evoked in him during the performance. He may find it difficult to separate the composition from the subjective responses which it aroused. The composition becomes for him an "expression" of those reactions he had: of nobility, of piety, of vigor or energy or struggle or affection, of darkness or moonlight or gay dancing — or whatever it might be. But to some extent, depending on his own capacities and of course on the quality of the performance itself, he will carry away with him some conception of the composition as a design in sound, self-contained and untranslated into those other subjective terms. He may even be able to whistle a fragment or two; and the outlines of the composition as an event will stay with him, just as the broad structure of a play, or the outline of a book, or the contours of a landscape he has enjoyed, may remain with him long after his experience of them.

The most obvious thing about the performer, who is the immediate agent in this event, is that he is physically very busy, which is what leads naive people to consider him mainly a sort of athlete or gymnast. The gymnastics have an interest in themselves, and some people like to sit on the left side of the music-room in order to watch the player's hands. A player cannot get far without that gymnastic skill. He must have exact and subtle command of his nerves and muscles in fingers, hands, arms and foot, so that physical difficulties do not block his musical intentions, and so that he can bring the sound-patterns forth from the instrument not only accurately but with all the necessary and appropriate plasticity of dynamics and movement and rhythm. He will have some specialized ideas and principles in terms of which he understands this part of his problem, and these might be called his Theory of Technique, which for him is an important accessory to his Theory of Performance. Theories of technique (and they are many) may sometimes affect the musical quality of a performance very much. For instance, a pianist who works from the premise that the piano must be treated as a percussion instrument may thereby profoundly influence his musical results even to the extent of distorting the composition. However, since technique is most appropriate and effective when it is least in evidence, I will make no further mention of it beyond noting that it does constitute a part in a performer's theory. It is the theory of his gymnastics, but there is more to performance than gymnastics.

A performer is not merely a first cousin to a chimpanzee, oper-

ating an instrument in accordance with a code of instructions written on paper. He is a human being like the listener who has as diversified and personal a range of responses to the music as any in his audience. But he is also one who has studied exactly what it is about musical relationships which forms patterns and designs to arouse these reactions in a listener. He knows how these factors work and what he must do to control them to communicate to the listener as far as possible the idea of the composition as he believes the composer conceived it. His responsibility is to arouse those responses and only those responses in the listener that are appropriate.

It is an objective energy or power in the musical sounds and patterns that produces such a wide range and variety of effects in a listener, an energy and power which the composer and performer have at their disposal, which dictates its own laws and which they must understand. A composer explores the forces latent in musical sound-relationships, testing them on his own sensibility and constructing his work accordingly. The performer follows him in this process in order to work out the pattern of experience which he must bring about in the listener. But it is crucial to observe that his control of this experience is on the level of the sounds. During performance he is not concerned with such subjective matters as emotion or imagination, or any of the further responses that the music may stimulate in the hearer and that it may have stimulated in himself. He is concerned with realizing a composition in sounds, as he sees it implied in the specifications on the composer's score. Through control of the plastic factors, dynamic and rhythmic, he is endeavoring to produce a sound-event that will command the attention, hold it from beginning to end, and keep the listener occupied and engrossed in the perception of musical forces building up their own logical and dramatic involvements and working themselves out to a conclusion determined by their own nature. THAT is the composition. In doing this, he is dealing with two psychological functions in the listener, the listener's attention and his sense of time as they are operated upon by musical patterns.

I think it is from this standpoint — a consideration of how the performer exerts control over the listener's attention and sense of time — that we can best understand what a performer accomplishes.

The player's skill with his instrument is applied to the molding of those plastic aspects of the composition which the composer must leave to him, the management of loudness and softness, of balance, perspective and sonority, and of the subtleties of rhythm and pace. By the way in which he manipulates these plastic resources he effects his command over the listener's experience of the composition. It is by control of minute shadings in loudness that he makes the listener follow a musical line to its point and its conclusion. It is by a change in the dynamic level, or a slight change in the fine-grained regularity of the underlying pulse, that he points up for the listener the fact that one statement is ended and a new one begun. Through such subtleties of loudness and softness, regularity and irregularity, he makes clear the difference between "the-same-thing-going-on-happening" and "something-new-beginning," between "this-is-important" and "this-is-inci-

dental." By the balance between simultaneous sounds he determines whether the listener's attention will be mainly on one or the other, or so equally given to each that it is the relationship he perceives and to which he responds. He can give emphasis to certain characteristics of the composition above others and so regulate the degree of significance that is attributed to each part in the impression of the whole. He can prevent the listener from attributing more than fitting importance to any minor event in the whole, by treating it casually. And he can make certain that the listener does not miss the events which are most significant in the work, by giving them stress and emphasis.

He can do all this because, having worked out his conception of the composition and prepared himself with the skill for molding the plastic resources available to him, he can himself become a listener, and by observing his own attention-processes as affected by his own performance, he can pretty well know how the listener is being affected. He holds the attention of the listener intent upon a musical line by making sure that his own attention is intently held. He guarantees the continuity and unity of a phrase or progress in the listener's mind by making sure of it in his own. He arouses expectation in the listener by himself actively expecting the significant event and seeing to it that the crux of the occurrence is not anticipated. He assures recall of a previous musical statement by reference to its evocation in his own consciousness at the appropriate time. Prepared with his conception of the work as he sees it and armed with the command over his instrument, he proceeds, in effect, to actively "hear it into existence." He knows that where his own attention leads, that of the listener will follow; and that the structure of musical event that evolves for him will also take form for the audience.

The metaphor is apt when we speak of a performer "throwing light" upon a composition, for the play of attention which the performer controls is much like the spotlight of a stage-director, turned and led this way and that way over the complexity of a whole pattern, now brought to sharp focus, now diffused; at times intense, at times dim, giving dramatic dimensions to the event that is experienced. Like a stage director, the performer has it in his power to determine for the audience just which of several simultaneous events shall have the greatest importance at any one time, and to what degree of intensity they shall be perceived. He controls the degree to which the listener is involved in the events of the composition at each stage during its progress. He decides at which moments the grip of attention shall be relaxed and released, at which moments the listener shall be held in the grip of a line until its statement is completed. The player's own attention operates during his performance commanding, and at the same time commanded by, those plastic factors, loudness and pace, by which the relative importance of elements in the composition is made evident and through which the composition is revealed as a living and dramatic event.

Because he has such power over the mind of the listener through the plastic resources of performance, it is just as possible for a player to conceal the true nature of a composition as it is for him to reveal it.

He may make insignificant what should be important, or portentous what should be trivial. He may project through his manipulation of the dynamic shape an intent entirely at variance with the implications of the inner musical relationships. He may make dramatic what should be lyric, make agitated what should be serene, and introduce gestural intensities which do violence to a composer's more sensitive purpose. Such performances may arouse great excitement and approval in an audience, and there are performers who have achieved great fame by this questionable means. They are the kind of performers of whom it is said "he makes every composition his own." The best performance may often be less sensational. Inevitably the personality of the player has its influence on his performance, but that performance is most faithful to the music wherein the player's personality is least evident, for all his resources as a performing artist are at the service of the composition, his own contribution of plastic treatment being held subject to the discipline of the musical relationships represented in the composer's score.

It is conceivable that a performer possessing in great degree the innate sensitivity to musical patterns that we evade defining by calling it talent may intuitively sense what is important and significant in musical patterns without recourse to overt analysis of any kind, and instinctively give in his performance the plastic form that is most true to the inner musical forces comprising them. Every artist works to an extent in this way, under the lead of intuition. But intuition needs the discipline of experience and knowledge and reason and is otherwise never entirely trustworthy in dealing with the complex and inter-related forces that make up a musical composition. The understanding of these forces and how they are used by composers to build musical compositions is of course what we call the Theory of Music.

Much depends therefore on how much command the performer has of music theory, on the degree of enlightenment with which he can view the composer's score, on how clearly and in what terms he sees the forces in the musical materials making up the texture and structure of the composition.

Just as there are folklore theories of performance, there are folklore theories of music which can mislead performers, and listeners too, because they are too limited an explanation of what goes on in most musical composition. For example, there is a tendency among students which is fostered not only by the layman's vernacular habit of calling any musical composition a "song," but also by popular and professional "music appreciation" teaching and even some instrumental teachers — a tendency to think of music in one dimension only, the melodic one. Students are told in lessons to "bring out" this melody or that theme, a phraseology which seems to imply that the rest of the music is to be somehow "left in." Music appreciation courses discuss compositions in terms of "themes," all else being presumably background, like the dinner music which accompanies conversation but has no connection with it. This mono-linear concept (and it is applied even to fugues) is the commonest of false and misleading theories of musical texture. It rivets the performer's attention on one dominating element, while the

rest "just happens" in an unorganized way for both him and the listener. Literally, the "composition" is not there.

The truth of the matter is of course that Western music began its development by being interested in the effect of two tones or musical lines sounding against each other, one of them further serving as bass, so that all Western music is a complex development of relationships in two dimensions. The most essential idea that must get across to the student performer is that in a musical composition all the elements are always related; that is what makes it a composition.

The first tools with which theory must arm the student are those for analyzing the way in which tones and sequences of tones interact, the way they develop tensions and propulsions, and how these build up the energy of the musical composition to an inevitable working out over a period of time and at a necessary pace. Composers have been exploring for several centuries the patterns of chain-reaction to which tone-relations can give rise. A performer must be able to take a particular composer's particular score, to see with what sources of musical energy the composer was dealing and how he worked them out. The music theorist has ways of describing and explaining how the forces in musical elements operate, and these descriptions and explanations are mental tools which a performer can use in arriving at an idea of the unique character of the composition in the score from which he starts. Music theory gives him concepts which are the tools to be used for discovering the operation of musical forces in a composition, in finding out how they relate and interact and hold together and produce their effects.

If you want to take something apart to find out what holds it together and how it works, of course you have to have tools appropriate to the purpose. If a piece of machinery is held together by nuts and bolts, you can never take it apart with a screwdriver. If what holds it together is screws, you will never succeed in analyzing its structure and operation with the help of a monkey-wrench. Correctly understood, the melody-accompaniment concept is a useful little tool to use at the right time; but when its limitations are not realized it can blind a student to the nature and vitality of much of music literature; it is too limited a theory. A limited theory is generally a false theory, too specialized a tool, and one which is inappropriate to any but a limited number of contexts. To cope adequately with the wide range of musical literature the student needs skill and experience with a very extensive kit of tools.

The greatest hazard in theory is probably over-generalization. Application of a conceptual tool (like the melody-accompaniment idea) to a context it does not fit is one example of this — the overgeneralization of a principle. A similar hazard lies in overgeneralization of a judgment.

Let me illustrate this. Students are commonly assigned, as part of their theory study, exercises to work out in harmony and counterpoint, according to rules. They are told, "of course Beethoven and

Mozart and other great composers used parallel fifths, but first you must learn to follow the rules before you can break them!" And so the student is kept with his eyes and attention riveted to the rulebook, instead of having it pointed out to him that the significance of things like parallel fifths is that they are dynamite, and then letting him study how the great composers handled dynamite. It seems to me that the way to study and understand the manipulation of musical forces is to look directly over the shoulders of the real experts, the composers.

The other day I was trying to help a young piano student grasp and see more clearly a sequence of chords in a Bartók piece, in a passage where he found the bristling accidentals confusing. I suggested that it might be easier if he described the chords to himself by their shape, as six-four chords. He thought a minute and then remembered that his theory teacher had told him about the six-four chord — it was "weak." Let me quickly say that I am far from holding a theory teacher responsible for a young student's over-simplification of a notion, but the illustration will underscore my point. As a matter of fact, the sequence of chords in question had an effect anything but weak, a fact which the force of previous authority was obscuring for the student until I pointed it out. The judgment was over-generalized and inappropriate to that context. The fact students need to learn concerning things like parallel fifths and six-four chords is a moral as much as a musical one: one may betray weakness by using means less subtle than the circumstances justify. But let them learn this from the literature, from watching the experts suffering through the problem of musical conscience.

Theory must have many faces. There cannot be a single theory applicable to all music, but every style of musical composition needs to some extent a different theory. And the way to learn this is not by looking at the rulebook all the time but by looking at compositions. Otherwise the rules stand like the laws of the Medes and the Persians in the student's mind, and it may be years, if ever, before he opens his eyes one day to the truth of the music and finds that the rules are not anywhere near so true as all that. Dealing with real music is a safeguard against over-generalization. From the point of view of a performer, I would say that theory as it is often taught is too abstract and academic a study. It does not get around soon enough or often enough to dealing with actual compositions. There is not sufficient study of live music. The student is left with a residue of bits and pieces that are of little use to him in his job as performer.

A performer must deal with compositions right away and must develop the tools for thinking about whole compositions as soon as possible. But too often his theory study does not go beyond a static labeling procedure, a dogmatic judgment and stereotype formal concepts that never find relevance to the living music with which he must deal. The two perspectives on music, theory and performed compositions, are not brought into the same focus, so that he might see these analyzed particulars as they function in a whole composition, as he must realize it for the ears and mind of the listener.

It does not profit the performer that he is able to identify a certain relationship between voices as a major seventh unless he goes on to see its function not only as a dissonance arising from suspension, but also as tightening up the finality of a cadence with a structural and dramatic function in the progress of the whole work. Nor is it sufficient for him to be able to label a harmonic combination as dominant unless he goes beyond that to see its place in a harmonic progression that leads the music onwards and brings it to the attainment of some overall structural and dramatic purpose. This is where he must begin as a performer, but it is only his starting point. He must go on from this to consider the implications of such evaluations for his performance. He must decide: just what balance between voices at the moment of suspension (or whatever the source of tension may be) must he achieve in order to give the dissonance its requisite propulsive power according to the demands of the musical movement in texture and phrase? How acute must the bite of the seventh be at that instant, to make the event most vivid yet still proportionate to a consciousness of the integrated phrase? Or how much emphasis by subtle dynamic or rhythmic treatment must be given to the change from dominant-color to tonic-color at the instant of resolution? How much change will be too great a change and result in undue weight being given to this lesser event in the context of more important events of greater duration? Always he has to look at the context, and always at the whole composition.

The kind of theory teaching that would be of most use to the performer would consider his needs from this point of view. Since a performer needs to be able to formulate his conception of the composition as a live experience constructed out of the dynamic materials of music, which he will present to a listener as a pattern of experience in time, it is essential that the student performer learn to see the materials of music not merely as static elements to be dissected and labeled and discussed according to dogmatic rules for "good" and "bad" progressions and stereotype formal concepts. His theory study, no less than his practical studies as performer, should lead him to see music as something with an independent energy of its own, resistant to manipulation, extending itself in time by its own momentum, with the power to command the human mind and attention and to arouse incalculable responses in the imagination and emotions as a consequence. It is not something to be done on paper according to a book. It is only to be discovered through the ear and mind and the human response stimulated through the ear and mind.

I am proposing the notion that, if "musical intelligence" is to mean anything more than an apology for lack of any other kind, then it can only mean a keenly developed awareness on the performer's part of music in these conscious terms. Theory teaching has failed for the performer unless it increases his sense of the magic and mystery in the power of musical patterns, develops in him an understanding of the dynamic functioning of the materials of music, and empowers him with the ability to conceptualize a musical composition as a live psychological event, as an organic pattern of active and inter-related forces operating upon himself and the listener alike.

It might be better if instead of speaking of it as "Music Theory" we called it more specifically "The Theory of Musical Compositions." I do not mean you have to make every performer a composer, though that might help. But if we spoke of "The Theory of Musical Composition" it would remind us that we are concerned not with some higher platonic reality, but with what has gone into the making of actual living musical compositions as performers have to deal with them. It would keep us looking in the right direction, instead of into the sky.

The conception of theory as the functioning of musical intelligence suggests the possibility of a higher level of operative discipline in a performer's practical studies, and an ideal for the standard of teaching of both theory and performance. On the one hand, it would call for a theory teacher having at least some of the talents of an interpreter; on the other, it requires that the teaching of performance should have constant reference to theory. Unfortunately, in much studio teaching musical materials are very little mentioned except at the most primitive level, and performance is directed solely on the authority of the teacher's intuition; or according to that hand-me-down model, "tradition," as exemplified by the teacher or by his favorite teaching editions; or, still worse, by imitation of the "master performance" on a recording. This is the purest of "monkey-business" — the mere aping of externals in which the reason for anything is never asked, and asked of the only authority from which a valid answer can be obtained, the composition itself.

Theory should be a part of all studio teaching, an integral part of the approach to performance. Even an elementary student can learn to note how the outlines of his simple piece are marked by the "resting-places" of the bass. And all students should learn that the expressiveness of music is not something they must learn to "put into it" but something they must reveal by working out that plastic treatment which makes most evident the textural and structural nature of the composition. The study of music must guide the study of its performance. The teacher must lead the student performer to a higher level of enlightenment wherein intuitive and rational perception unite and cooperate, and insight supplies the directive and corrective to intuition.

On this higher level the performer will be able to view musical compositions somewhat as an ornithologist views birds, or a botanist views plants, to see what they are like and how they function as organisms; and this conscious knowledge gained from theory will make his intuitive response to music more sure. Conversely, his intuitive sense of the rightness of musical relations in performance will be constantly checked against the results of his analysis. He will no longer be content to make a crescendo because some teacher or editor (or even the composer in the role of editor) has indicated that he should, but will ask himself: "What is happening in the music that should be pointed up by an increase in this passage?" Or, if an accent is indicated, he will ask: "What in the texture or drama here calls for emphasis, and how much?" Such a performer will recognize, when his instinct or intuition tells him to make the music suddenly softer, that the treatment is justified because of a resolving dissonance at that

moment, or because of a startling change of direction in the harmonic progress, or a sudden retreat from a previously asserted purpose in the structural development of the composition.

In sum, the level of performance I am describing here is that of an intelligent musical performer sensitized to music with all his resources. He is not merely a highly trained automaton performing under the direction of blind instinct, however refined blind musical instincts may become. He is not merely a rational mind, dissecting and analyzing the dead carcass of a musical composition with a dry brain in a dry season. In this performance the two have become one, a complete musical personality with mind and imagination and intuition working together toward producing an enlightening and communicative performance which shall engage not only the player but the listener as well at this enriched level of experience.

Such an enlightened level of study on the part of performers is particularly important in this present age, when suddenly the world of our cultural consciousness has expanded in both space and time, and the attitudes of other cultures and previous ages all clamor and compete for our understanding, and no one point of view and no one orientation is enough to serve performers as a working philosophy. The primitives saw music as a sort of beneficent drug or a magical intoxicant. At a later time, music was classed as a branch of mathematics. In the early 18th century musical composition was declared to the greater glory of God and the delight of the executant, and the 19th century discovered it as an escape into dreams. Our own time, to use the phrase of H.G. Wells, has "broken the frame of the present," and a performer is faced more than ever before with the need for understanding and synthesizing the creative philosophies of the past. We need, above all, performers who can bring to their art and study and teaching the fullest resources of insight and skill. Music is ONE study, in which theory and practice function together. I am suggesting an ideal for that study, which demands that neither theory nor performance should stand alone, for music must have both at once.

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Eugene Weigel: For the Music Educator

> Culture is activity of thought, and receptiveness to beauty and humane feeling. Scraps of information have nothing to do with it. A merely well-informed man is the most useless bore on God's Earth. What we should aim at producing is men who possess both culture and expert knowledge in some special direction. Their expert knowledge will give them the ground to start from and their culture will lead them as deep as philosophy and as high as art.[7]

7. Alfred North Whitehead, Aims of Education, (New York, MacMillan, 1929).

Are our music schools producing music teachers for the public schools who possess both culture and expert musical knowledge? Who loses if we are not? Every young American! For in the schools today are all those young people who will become all tomorrow's composers, performers and listeners. And there in the public school nearly all of them will meet for the first time in their lives someone who professes music, who earns his living through music, and whose opinions, attitudes and abilities are taken by these young people to have the weight of professional authority.

If these graduates of our music education curricula are to be something more than useless musical bores to young Americans, it is in these same curricula that they must receive culture and expert knowledge. Within these curricula it is principally the area granted to what is generally called theory and literature that they can begin on the path that will lead "as deep as philosophy and as high as art." It is there, first of all, that they should gain the consciousness of a philosophical understanding of music and the conscience for music inherent in being an artist.

Yet in the past forty years a summary of curriculum patterns of our music teacher education shows that the semester hours allotted to this area, music theory and literature, have decreased from forty to sixteen.[8]

Does the path from music theory for music education students lead as high as art? If it does, it is two and one-half times shorter now than it used to be. Or perhaps students today philosophize and run the path toward art at more understanding per hour than they did back in the old days. For the composer, fondly hoping that today's youngsters who are tomorrow's composers, performers, and audience, will have a better time of it than his generation, this music education business, for it has become a business, presents a dismal tunnel of unlove, un-think, and un-art. As far as music is concerned, as the composer understands music, the American experiment in mass culture through mass education seems a failure. After all, do any of us doubt that music is an art? Have we not the duty to consider that every person earning his living through music, must of necessity be an artist? To call the usual product of our music education curricula, stepping out with newly won music degrees to teach young Americans, artists, would be irony in the profoundest sense. Such young graduates themselves would shy away from the responsibility of being called artists.

As far as music is concerned, the failure of the American experiment in mass culture through mass education seems due to three things: one, the presence in music schools of too many students who, planning careers as music teachers, lack the inherent ability necessary for such careers; two, the brevity and ineptitude of their musical training toward artistry (artistry in the broad sense and not in the narrow sense of performance ability alone); three, the lack of musical

8. Bjornar Bergethon, "Toward Improving Music Teacher Education," Education, Vol. 76, No. 7.

background (before embarking on their professional training) of nearly all those preparing for this career.

The presence in these schools of those students lacking inherent ability is due to the low or non-existent entrance requirements for this curriculum almost everywhere prevalent today. But more than that, the inability of this curriculum environment to assist these misfits, once they have enrolled, to discover for themselves that they are in the wrong pew.

These three factors, lack of inherent ability, poor, short training, and sparse background, create a vicious circle perpetuating itself. The lack of musical background of these students is most specifically due to the same lack in their teachers who preceded them through the same curriculum and who taught them in their public school days. Now they proceed into the field to send back to the music schools the same culturally unaware youngsters to proceed through the same curricula to train the same, etc., etc.

We are not assessing here the abuses, by musical perfidy, inflicted on all the rest of our young American public school students by the products of this vicious circle, or more accurately, this downward spiral. Here is where the vast public distaste for our art has its breeding ground. But let me say that I have, as a musician and composer, the profoundest admiration and gratitude for those self-effacing exceptions who struggle mightily and largely unnoticed, within the confines of this enormous matrix, achieving very often the impossible, musically, in their public school positions. God bless them, they are keeping music alive!

But is it any wonder that those of us who have our musical being within the higher echelons of our art tend to look upon this situation with unmitigated despair. Our despair, justifiable as it is, further contributes to the total situation when we find ourselves brought into contact with these young people through our university careers as teachers.

Composers, like other musicians, certainly have the right to address themselves exclusively to their careers, turning their backs on this particular despair, since the nature of art always implies a certain aristocracy of achievement. However, some of us have chosen to concern ourselves with the causes of this despair in the generally thankless task of breaking through, and disrupting where we can, this downward spiral toward un-music. The task of dissolving this vicious circle clearly must be undertaken within the curricula for the music education student, and most specifically, within the area of theory.

Our theory curricula are derived from a tradition of learning about music from a series of abstractions. It was assumed in the past, as it still is now, that by practicing the component aspects of music, abstracted from music, the student would refer these knowledges to that totality we call musicianship and gradually create his own synthesis and thus emerge a musician. This belief we have inherited from the

Middle Ages and this philosophy was applicable in past cultures, where the young were already immersed in the practices of a common musical synthesis. Then it could be said, one practice, one synthesis. Our eclectic time is characterized by many practices, many syntheses.

How we have reached this eclectic state is beyond the scope of our present inquiry. A few observations may serve to demonstrate, however. Through cultural anthropology the floodgates have been opened for Americans. Balinese, African, Near-East, Indian, Japanese, Chinese, even American Indian music have broken through the narrow confines of Western music. Technology has made available, in partnership with musicology, historically sensitive performances of music from the full gamut of Western music's heritage. Contemporary composers building on this new wealth of influences present a welter of experiments and adventures in the world of sound.

The young American hears and half-hears music tossed and churned by these influences nearly every waking hour: LP's, Stereo, Movie music, television and radio music, and the ever-present Juke Box. But the young medieval boy or girl heard only the music of his own time and his own region. There was only one great musical adventure for him, the Crusader with his new-found exciting Near-Eastern music. The renaissance youngster heard Byrd in England, Palestrina in Italy, Vittoria in Spain, or more literally, only the music composed by the musicians resident in his home town. The young of baroque days heard no music which was not derived from or related to the procedures of continuo practice.

As an aside here, the youngster today who limits his musical pleasures to the now-stratified layers of jazz has a reference point in the lead-sheet system of chord change which is closely related to the baroque practice of figured bass. The string-bass player today improvises a bass line which is neo-Baroque in character. This reference point of chord change continues the possibility in jazz, as no where else today, for the tradition of improvising. However, since the improvisations are performer-centered and immediately available through the LP to all other improvisors, the traditional jelling of improvisations into substantial works of art by composer contemplation is missing.

But to return to our young music student of the past, we can understand now that he was already musical in our sense of the word by a kind of osmosis from his unified culture and was ready for synthesis from abstractions in his training. He could relate the separate disciplines of his training to a clear musicianship already in practice from a very early age. Our student in America is not in possession of any such clear musicianship from a single practice when he appears at a campus asking to be prepared for a professional career. The hard fact is simple and cruel: American life and education, diverse, diffused and pseudo-eclectic, does not prepare the young to create syntheses from abstractions.

We are forced to take a new and critical look at theory itself, its

methods and even its basic assumptions. Theory itself must survive if music is to survive, but critically, theory must come to mean that area of music study concerned with understanding how music works; why it does what it does; and what are the materials used in doing it. Looked at in this way, the methods of today's theory are inherited from past effective practices which are no longer effective. Some of its inherited basic assumptions, still true to the mature musician, are grossly misleading to the young student. They must be classed as inert ideas. "In training a child to activity of thought, above all things, we must beware of what I will call 'inert ideas' — that is to say, ideas that are merely received into the mind without being utilized, or tested, or thrown into fresh combinations."[9]

The composer, conscious and reverent toward his tradition, but still vitally aware of vibrant new insights and always adventuring with new ideas, is bound to sympathize with the freshman who is confused when confronted by these "inert ideas" applied to him with all the authority of the theory class. Consonance-dissonance? To him there are only new sounds and corny sounds; the dominant seventh for him needs resolution like a hole in the head. Species counterpoint, counting up interval values, and evaluating voice-leading according to Bach or Palestrina, who may have been contemporaries for all he knows, what has that to do with the Four Freshmen or singing commercials? If he is the obedient type he will store away the sounds and procedures he knows and after years of being subjected to these "inert ideas," he will, if he wanders into a composition class, trot out his clichés and begin where he was when theory first imposed itself. Nowhere in all that time did he reach synthesis from any of these theoretical abstractions. Nowhere did he encounter any truly responsible musical experience in which he was made to see ideas about music activating music by personally "utilizing, testing or throwing them into fresh combinations." "From the very beginning of his education, the child should experience the joy of discovery. The discovery which he has to make is that general ideas give an understanding of that stream of events which pours through his life, which is his life."[10] Theory, with its "inert ideas," continually deprecates all the student knows and feels about music. Poor as his musical life may have been, it is still his and all he knows. "No more deadly harm can be done to young minds than by deprecation of the present. The present contains all that there is. It is holy ground; for it is the past, and it is the future."[11]

What is needed for these young Americans immersed in a welter of undigested musical experiences from the American scene, is not, in the first instance theory at all, but responsible musical experience. By responsible musical experience, is meant conscious musical experience.

The present writer has had a number of opportunities to attempt to provide for such students experiences of responsible musicianship.

9. Alfred North Whitehead, op. cit.
10. Alfred North Whitehead, op. cit.
11. Alfred North Whitehead, op. cit.

Most specifically applicable to our discussion here was a two-year experimental theory class for education majors at the University of Illinois some years ago in which no holds were barred. The only restriction was an agreement with the theory staff that a generalized proficiency type of test be given to all the students of the experimental class and all other students subjected to the regular theory classes at the end of each year, namely, the freshman year and the sophomore year. This test was based on the course content of the theory curriculum in current use at that school.

From the first day the class was treated as a group of performers and composers "utilizing, testing, and throwing into fresh combinations" the musical material most familiar. To begin with, each student sang what he wrote. If he could not sing it, he revised it until he could, discovering along the way general principles. Next, the adroit student and the slow student wrote duets for themselves and the same process continued. The adroit singer found himself in a teaching situation, forced to elucidate for the slow singer the basis for his higher abilities. As the ensembles increased in size, the young composer was freed from performing duties so that he could conduct his own effort.

The writer has found that such completely responsible musical experience has in most cases stirred in the student latent revolutionary attitudes toward the fixed body of theoretical ideas that surround him. "Every intellectual revolution which has ever stirred humanity into greatness has been a passionate protest against inert ideas."[12] Day by day it was attempted to provide an environment in which the need for synthesis was felt by the students as a constant pressure. As they learned to play, they learned to listen. To listen intellectually as well as emotionally is to analyze. To analyze is to learn theory, and by comparison, to learn styles and thus history. Thus learning and playing together developed taste and with it the desire to play more responsibly and with a sharper musical awareness. Such students acquired a marked initiative which came from their new-found progress in personal musical responsibility. Is not this the proper responsibility: not to the teacher; not to a text-book; not to rules; not to inert ideas; but to music, and hence to the student himself? Now the students were guided to write and perform imitations of the music they knew, proceeding from the abstract principles they had there discovered. When successful, their composing and performing of such imitations became a new measure for them of their musical understanding. They understood, however primitively at first, but consciously, that music through these abstract principles is sound dancing and that that is visually what conducting is. At this stage they were conducting the class in their own and their fellow students' efforts as a necessary part of their total responsible musical experience. If they had by this time in their possession the inner sense and understanding of the dancing of the tones they then desperately wanted to learn to transmit in conducting what they felt about what they had written to their performing classmates.

12. Alfred North Whitehead, op. cit.

To have seen a budding musician, however poverty-stricken his musical background may have been, when he first succeeds in transmitting his musical emotions to others because he understands the intellectual basis for those emotions, is to have had one's reward as a teacher. Such a student renews one's faith in the power of music itself. It was no course content, no teacher's pet ideas, no possible text-book which has brought this young student to a total and organic sense of what lies before him as a perpetually learning musician, but it was music alone which taught him this, music stripped of her burden of "inert ideas."

To return to our young freshmen as budding revolutionaries, the quick seizure and embracing of music as an art by the majority of such a class forced and encouraged frank and constant reappraisals of their native abilities and from this their right to continue their musical training. The writer was always faced after the first few weeks with a counselling problem. By the end of the first school-year, the class had weeded itself out without any prodding. One-third had by this time found itself musically wanting and had, after serious personal evaluation, entered upon some other course of study.

Some space should be given to these students so that they may speak for themselves. At Christmas time, one freshman girl wrote in part:

> When first assigned to write a Christmas Carol with words, I did not have the vaguest idea what the end result of my labors would be, and did not even get a "smell" of an idea until I was home doing housework. After singing various phrases from songs I had learned, or was in the process of learning, I began trying phrases of my own. After doing a great deal of this, I discovered something I liked — it seems to me after writing and nursing it, and whatever else goes along with these, that it is part something which came from my thoughts and a fraction of something I had learned or heard when I was a small child. This feeling still persists, but I have looked high and low and searched into my childhood music books and I can find no such thing. Well, as it was, I decided to write out the melody and try to create a Christmas Carol. This is where the assistance of a piano came in. After placing it on paper, I was not so sure about it, but I proceeded to write out the other parts, — the first attempts came out terrible! You see, it was to be a canon — only the laugh was on me. I won't say another word! My next try was writing out a figured bass and filling in the voices. This resulted in a complicated mess, even if I did know the chords and their relationships. I then promptly gave myself a good scolding and told myself to sit down and use the simple chords, tonic, dominant and sub-dominant, mostly. This resulted in more evenness, bringing out of the melody, the steady four-four beat, much better harmonization in the alto, tenor and bass in relation to the soprano, better chord-leading, and better phrasing.

Out of this came a much better understanding of traditional harmony and counterpoint. The reason being, I could apply what was at my command, and trying this and that without being hemmed in with traditional rules, which are excellent to know, but what good are rules if you learn only to apply them by one rule at a time, and always, never-ending rules. The final result is the fear of writing something entirely wrong and feeling utterly stupid. It offers no encouragement for freedom. Rules are excellent, and rules can be fun when you find out how and why they are applied without feeling you are in a prison of rules. It is like having laryngitis (being a voice major)."

At another time the class organized a demonstration on stage of the class in action for visiting educators. For this they distributed to the audience a testament they had prepared. Under the heading, WHAT ARE THE RESULTS AND VALUES OF THIS MUSIC WORKSHOP, they listed the following:

A: The workshop stimulates individual and group curiosity and creative exploration. This mutual learning experience builds confidence and thereby ability.

B: The individual compares self with group as his ideas are exposed to group evaluation for a group of students have more problems collectively than any one individual. Each individual profits from the awareness of and solutions to each problem.

C: Via the workshop, students realize that music is a living art, something we are a part of, and for which we are responsible.

D: Students gain knowledge and ability because of interest, curiosity, realization of need to learn, and practical usage, rather than through a forced or prescribed curriculum.

E: This procedure develops techniques for working with groups which will prove invaluable to us later as teachers.

And finally they listed these questions:

A. What are the potentials? Limitations? of this type class.

1. Is it college level procedure?
2. Could such a workshop succeed on a highschool level?

B. What calibre of teacher or leader is needed?

C. Is this "self-education through curiosity and research" workable today when the student is so closely scheduled by curricula?

Searching questions indeed from young Americans, questions which still

remain unanswered.

The question that arises in the writer's mind as he recounts the experiences of this class is a question which also remains unanswered. When will there be a break-through, an espousal of revolutionary ferment? Is there a school, perhaps even now, preparing to dedicate itself to the task of revitalizing this ancient discipline we call theory? The young writer in school today learns to write by writing; the young architect learns to design by designing; the young painter, by painting, etc. It should scarcely seem revolutionary to propose that the young musician practice musicianship.

The reader may rightly conclude that theory's diseases, music's diseases, are bred and nurtured in inept sociological situations. Music, our Art, is at once most profoundly personal, inward and subjective, yet the entrances to this world of inward music are from sociological situations only. One must make music first and most importantly, one must make it with others. The experimental theory class here described was simply a creative and productive microcosmic musical society. These students clearly understood this. Music schools, burdened with inert ideas, generally do not.

American society, bursting in genuine hunger for musical experience, finds few musicians graduating from music schools and theory courses with any understanding of this fundamental nature of their art. If it did, would it mis-spend millions erecting this dreary landscape of Music Education for its young? There can be no doubt that America is ready, willing, able to act idealistically toward music. It has already so acted. What will America do when it finally realizes the monster it has erected through the failure of its musicians?

If it is not already too late, music theory could consider joining the 20th century, out of musical joy and inventiveness, sloughing off its burden of inert ideas. If it were to do so, what could emerge? The American community, educated by true musicians, could then protect its investments in school-music by integrating it into the musical life of the community. Its music teachers would then be nurtured as responsible artists making music together professionally, not dying in abject culturally second-class citizenship, without opportunities for responsible musical experience.

For example, if one university, anywhere, produced the type of school-community musician America needs, and followed through with the full weight of its cultural authority, erecting a pilot program on a total community basis, in just one American community, the creative energy so released might shortly sweep all before it. If this has not yet happened, or something like it, it is due solely to the lack of faith on the part of musicians in the power of music herself. We need not search farther than the American theory class to find one breeding ground for such musical cowardice.

When one considers in its length and in its breadth the importance of this question of the education of a nation's

> young, the broken lives, the defeated hopes, the national failures, which result from the frivolous inertia with which it is treated, it is difficult to restrain within oneself a savage rage. In the conditions of modern life the rule is absolute, the race which does not value trained intelligence is doomed. Not all your heroism, not all your social charm, not all your wit, not all your victories on land or at sea, can move back the finger of fate. Today we maintain ourselves. Tomorrow science will have moved forward yet one more step, and there will be no appeal from the judgment which will then be pronounced on the uneducated.[13]

We can be content with no less than the old summary of educational ideal which has been current at any time from the dawn of our civilization. The essence of education is it be religious.

Pray, what is religious education?

A religious education is an education which inculcates duty and reverence. Duty arises from our potential control over the course of events. Where attainable knowledge could have changed the issue, ignorance has the guilt of vice. And the foundation of reverence is this perception, that the present holds within itself the complete sum of existence, backwards and forwards, that whole amplitude of time, which is eternity.

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Leonard Ratner: For the Layman[14]

Music theory for the layman is a matter which raises a number of general questions. At the very outset we should determine the following:

1. Who is the layman?
2. What kind of music theory is appropriate for him?
3. In what way may he be taught music theory?

Here, we consider the student in a liberal arts college as the layman in question. This limits the discussion since we are excluding many other kinds of musical laymen; nevertheless, there are advantages in centering our attention upon such students. The machinery for teaching them is set up; classrooms, equipment, units, requirements — these all help to organize the situation for a direct and sustained learning effort. We can also rely upon student interest and curiosity about music to provide motivation for learning.

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13. Alfred North Whitehead, op. cit.

14. The material in this article is based largely on Chapters I and II of the author's book, Music: the Listener's Art, published and copyrighted by the McGraw-Hill Book Company in 1957. Used by permission.

The kind of theory that is appropriate for the layman depends upon the usefulness of the theory. Our layman probably does not compose. While he may perform some music, it is not likely that this music has great scope or complexity. His principal contact with music is to receive some communication from it. Thus, his approach to music is through listening. Any theory which he learns ought to increase the intelligibility of the communication. Hence, any theoretical concept introduced to the student should tie in directly with some persuasive musical illustration.

How may music theory be taught to the layman? This can be done in different ways. Some laymen have the courage to embark upon a course in elementary harmony or counterpoint or perhaps general sight-reading and ear-training. Others, and these represent the majority, look for elucidation of the music they hear; they want to explore their musical experience more thoroughly than their very limited knowledge will allow. For these students, the course in music literature seems a proper vehicle. The wide choice of material and emphasis possible in such a course will enable the teacher to range freely and to introduce theoretical concepts meaningfully.

As the teacher makes his presentation, he must always color it with the idea that everything that has been included in the vocabulary of music theory is there because it has some potential for musical action, for musical quality. A scale, an interval, the concept of tempo, the action of a sharp or flat — these were first born in the context of musical action; later they were isolated and codified. Theory for the layman (or for that matter, for anyone concerned with music theory) must return the severed detail to its rightful position within a structure of musical communication and experience. If this is done, then the course in music literature or appreciation can be virtually saturated with implications of music theory; it can open the door for the layman to fascinating insights into the genuine substance of music, its relationships and their affective qualities.

In order to make such a presentation, we should establish certain fundamental criteria which will organize the details and give them meaning within a general context. I should like to suggest some such criteria.

These criteria cover the following basic qualities in music:

1. Qualities of musical sound
2. Qualities of musical movement
3. Effects of arrival in music

These criteria deal with basic, generally comprehended elements of the musical experience. By using sound, movement, and arrival as points of departure in our presentation we can begin with general impressions and perceptions, later linking them with special technical and theoretical points. Thus, qualities of sound will subsequently be connected with certain harmonic values and with texture. Musical movement will be further elucidated in connection with rhythm, harmonic action,

melody, and certain aspects of texture. Arrival will have to do with cadence relationships and structure.

If the layman listener uses the criteria of sound, movement and arrival as he begins his analysis, he is able to ask important questions regarding the music he hears. He can focus his attention upon qualities which I feel are basic in the composer's own view of his music.

When he listens for qualities of sound, he can judge the sound by asking the following questions:

1. What level or levels of sound has the composer selected?

   High, low, middle, wide or narrow range? What effect has the level of sound upon the general impression given by the piece? Such works as the Scherzo from Mendelssohn's Midsummer Night's Dream (high sound), the opening of Liszt's Les Préludes (low sound), the opening of Brahms' First Symphony (broad range of sound) can illustrate the effects of various levels of sound and their relation to expressive values in music.

2. How much sound is projected?

   Little, a great deal, a moderate amount? Examples of this quality might range from plainsong (small amount) to a Wagner orchestral tutti (great amount). This can be tied in with range and level, and the conclusions can then be linked to some of the expressive effects of the composition in question. Fullness vs. transparency of sound can also be evaluated here; in this connection we can point to the preference of much 20th-century music for thinness of sound. Also, we can tie up the amount of sound with the strength, a very important element as far as projection of musical meaning is concerned. Indeed, by loud or soft manner the composer can communicate his meaning perhaps more clearly than by any other means. This seems quite obvious, but just because of its immediacy it may be overlooked while we are evaluating the qualities of a composition. Compare the gentle dynamic effect at the beginning of the Mendelssohn Scherzo with the opening of the Brahms First Symphony; note also the dynamic contrasts in the first measures of Mozart's "Jupiter" Symphony.

3. What are the special timbres or colors of sound employed?

   Timbre or color provides another very distinctive element among our criteria. Unlike level, amount, and strength, color of sound cannot be pinpointed with ease. Our evaluation of this quality will be rather subjective, employing analogies and figures of speech. We might begin by illustrating contrasts of timbre, producing a tone such as the "violin A" upon the piano, a violin, a cello, a trumpet, or by

singing the tone. Impressions of blend or separation, clarity or opacity, fullness or thinness, brightness or dullness, edginess or softness — these are all varieties of tone color which can be noted, evaluated, and related to the general effect of the composition. Here we could also touch upon basic harmonic values, pointing out that the colors of sound in a composition are affected by the tone relationships themselves. We might compare the blended sweetness of a Palestrina motet, arising from the saturation of rather closely spaced triad sounds with the rich mixtures of Wagner's sound, arising from the use of highly-inflected tritone, seventh, and ninth combinations. These in turn could well be contrasted to the "open" effects of 13th-century ars antiqua music, based on sonorities of the fourth, fifth, and octave. The thin quality of some 20th-century music can then be ascribed to preference for combinations which have a minimum effect of "blend."

The universal validity of movement needs but the barest explanation to the student; movement is of the essence of all events that take place, musical or otherwise. Musical sound, moving in time, has certain values or meanings attached or connoted. Thus, musical movement displays the following general characteristics:

1. Pace or rate of speed
2. Regularity or irregularity
3. Degrees of emphasis or vigor
4. Articulation or degree of continuity

We can well use the illustrations for sound to demonstrate qualities of movement, combining the criteria to make a more complete picture. For example, the fullness of the opening of Brahms' First Symphony with its great strength of sound is carried forward and maintained by the slow, vigorous, steady pace, which has clear but widely spaced points of articulation. The lightness, high-level sound quality of the Mendelssohn Scherzo fits in perfectly with its quick, regular, gentle, and highly-articulated quality of movement.

After musical movement, logically the next point will be the effect of arrival. In order to be sensed by the listener, musical movement must have some relation to a goal, a point of arrival. Motion is not continuous; it is marked off in cycles or phases by points of arrival. At the same time, each point of arrival, except the final one, is a point of departure for a new phase of movement. To evaluate points of arrival in music, we can listen for the following characteristics:

1. Effect of finality
2. Clarity
3. Degree of emphasis

Evaluation of arrival in music requires the listener to make rather subtle distinctions, often quite subjective in nature. Arrival in music operates on something of a sliding scale, and we must qualify the degree of finality, clarity, and emphasis very much as we rate points of punctuation in language. For example, the beginning of the Finale of

Beethoven's Fifth Symphony has a dual aspect: it is a point of departure, of course, for the last movement; on the other hand, it is a tremendously dramatic point of arrival leading away from the scherzo; it is prepared by a very long period of gradually rising pitch, increasing strength of sound and amount of sound, and brightening color of sound. The clarity and emphasis of this point of arrival are at their maximum. On the other hand, there is but a partial sense of finality. This is no ending but a beginning of something new. Conversely, if we take a song like Drink to me only with thine eyes we can hear four clear points of arrival, evenly spaced. The first, second, and fourth of these points might well stand as final; only the third demands continuation. The level of emphasis is about equal for each of these points of arrival, relatively light, with the exception of the last, which seems stronger by virtue of its greater implied length. The points of arrival in this song are principally points of punctuation or articulation; the point of arrival in the Beethoven symphony acts as a goal foreshadowed long before its actual appearance.

Still another example: the pauses at the beginning of the Prelude to Tristan are not clear, emphatic, nor are they by any means final. In each phase of movement the music trails off; it evaporates, leaving us suspended in mid-air, figuratively speaking.

We can link movement and arrival quite closely in our analysis. The gentle articulation of the cesura in plainsong is a breathing point which defines a short phase of relatively moderately paced gentle movement. The dramatic and momentous points of arrival which mark off the exposition and development sections of a classic sonata-form follow broad and sweeping phases of movement. The steady, purposeful movement with few but decisive points of arrival in a baroque fugue or concerto might be contrasted to the tentative quality of movement and indecisive cesuras at the beginning of Wagner's Tristan.

Listening for points of arrival has an interesting and valuable effect for the student. As he anticipates these points he becomes quite acutely aware of the musical action that is taking place, the play of sounds and textures, the fluctuation of qualities of movement, the design being projected. He can then begin to appreciate the structure of the music as a plan of action, even in such a complex piece as the first movement of Beethoven's Third Symphony.

The treatment of sound, movement, and arrival in music described above illustrates an approach which can gain maximum results within a limited time. By asking specific questions about the music as he is hearing it, the layman establishes fundamental points of contact, points of orientation. Such questions focus his attention directly upon the music, reducing extra-musical associations, eliminating idle daydreaming. His listening becomes active; it is no longer passive.

In the above presentation, language that was directly intelligible to the layman was employed. This facilitates the grasping of general concepts; various kinds of musical action are related to general aspects of experience. Bit by bit, then, the technical or theoretical terms

used to identify musical concepts can be attached to these general ideas. The approach described above precedes and anticipates the explanation of music along theoretical lines. Such a framework might also include pertinent observations about style and aesthetics.

Much as we have established value contexts for sound, movement and arrival, so can we establish a structural context for the examination of theoretical details. Such a context is found in the musical phrase. Since the phrase is a fairly short section of music with a clearly defined point of arrival, the listener can grasp its sense quickly; the entirety of a phrase can be encompassed within the attention span of the listener. The phrase gives us a point of departure, a phase of movement, and a point of arrival; it thus fulfills the requirements for a significant segment of musical structure. The analogy of musical phrases to those of language is useful. Both in music and in language, phrases contain clearly formed, characteristic ideas, yet they may lack something in form or sense to be complete. Within the musical phrase, we can observe melodic behavior, rhythmic relationships, texture, the action of harmony, and the sense of progression which is essential to musical form. Like phrases in language, musical phrases form into coherent phrase groups, periods, period groups, key areas, and entire musical compositions. Thus the phrase can become the point of departure for the consideration of musical form.

With respect to melody, the following points should have meaning to the layman:

1. He can grasp melody as a salient, familiar element in the musical pattern. To him, melody is a highlight, which may perhaps give a capsule version of the character of an entire piece or a section thereof. Memorable melodies can be cited to illustrate this point, such as some of the themes from the Tschaikowsky symphonies or the Mozart or Verdi operas.

2. The shape or outline of a melody can be appreciated readily. The range of a melody, its direction, its general conformation — these can be described and illustrated graphically. Some of the specific patterns which melodies describe, their turns of movement in musical "space," such as rising, falling, turning around one or two focal points — these can be recognized. We can recognize melodic arrival at the apex of the pattern, its point of highest rise or lowest descent, or at its final tone. Illustrating the points made above, we can observe the melodic behavior of the opening theme of Mozart's G-minor Symphony. This theme is characterized by two abrupt rises alternated with compensating level passages. These sharp upward thrusts give point to a brisk, vigorous, agitated, and buoyant quality of movement linked to sharp, brief contrasts between light and full qualities of sound. We hear four points of melodic arrival, of which the third is the highest and most intense.

3. Following the observation of melodic contours, we can have

a closer look at melodic construction, observing the nature and relationship of melodic motives. Motives may be compared to intelligible word groups, such as "once upon a time," "very well," etc. Generally, they can be described as a minimum phase of melodic movement, directed to some point of arrival; this may be a cesura, a mere point of articulation, or a point of connection to a subsequent motive. We can dramatize the arrangement of motives by illustrating repetition, variation, and contrast. These relationships, of course, carry immediate meaning to the listener. To illustrate repetition, we might use the second of the themes from the third movement of Beethoven's C-minor Symphony. Here, repetition underscores the single-minded, direct, hammer-like quality of the theme, with its heavy sense of movement and its great strength of sound. We can also point to the binding effect of repetition when it follows some variation or contrast in ABAB, ABCB, or other formal arrangements. The opening movement of the C-minor Symphony of Beethoven provides an excellent example of the variation of a basic motive; motives are gathered here into a steadily rising line that reaches a climax at its apex. We can get a very dramatic idea of the effect of contrast at the opening of the Finale of Mozart's G-minor Symphony. Certainly the extreme contrast of the "rocket" motive with its levelled-off counter-statement contributes measurably to the electrifying quality of this piece.

Having drawn attention of the listener to the importance of melodic motives and to their mutual relationships, we can illustrate in an extended movement, such as the first movement of Mozart's Quintet in E♭ major (K. 614) how motives are stated, joined, separated, re-aligned, and treated in different contexts. In all these examples, and in whatever others may be used, we can show how melodic motives have character, musical personality, and provide clues as to the nature of the composition of which they form the structural units.

4. At this point, we may venture cautiously into the matter of melodic intervals. Circumstances limit us very much here; however, certain salient aspects of melodic interval structure can be directly meaningful. Principal among these is the idea of size. Conjunct and disjunct melodic intervals create markedly different impressions. Melodies built principally from one of these two types will receive something of their character from the conjunct or disjunct structure. The smoothness of plainsong or the Hymn to Joy from Beethoven's Ninth Symphony depends entirely upon stepwise melodic action. The boldness we note at the beginning of Mozart's Haffner Symphony or Brahms' Third Symphony arises from the decisive leaps which line out these themes. Conjunct versus disjunct intervallic structure is a factor in the stylistic difference between the opening movements of

Stravinsky's L'Histoire du Soldat and Schoenberg's Pierrot Lunaire. (I mention these two works because they are contemporary to each other and exhibit some early 20th-century stylistic features in common.) If possible, the specific character of various intervals may be illustrated, with reference to their distinctive effects. The tightness of minor seconds, the richness of thirds and sixths, the "open" quality of fourths, fifths, and octaves, the instability of sevenths, ninths, and especially the tritone, these can be demonstrated in examples from musical literature, both in consecutive and simultaneous relationships. The layman may not be able to identify many of these intervals, but it will be most helpful to realize that such relationships do exist, and that they exert a profound effect upon the music he hears.

5. Finally, with respect to melody, we might draw attention to the role of melodic material within a given movement. The active play of highly contrasted motives in the first movement of Mozart's Eine Kleine Nachtmusik forms a neat contrast to the broadly singing melodic style of the Romanza. The clearly segmented tunes of Schubert's Impromptu in A^b show a different use of melody than that of the unbroken lines in a renaissance motet. In each case, as we evaluate the melodic character of a work, we should fit this quality into the general picture of sound, movement, and arrival established earlier; this will help to clarify the role of melodic action within a phrase or an entire composition, showing melody's organic relationship to the entire work.

In this presentation, melody has received first consideration, but only because of its salient nature. Rhythm is probably no less clear and direct in its impact, and it might well become the first element to be taken up.

With respect to rhythm, the control of musical time, the layman can grasp the following concepts:

1. The idea of a beat or pulse. This is evidence of a fundamental vitality in music; the beat tells us something about the attitude, the kind of activity being projected. We can begin by relating beat and pulse to musical movement in a general sense, showing that musical movement is built up by a series of beats and pulses linked together as points of departure and arrival that encompass minute phases of musical movement. We might draw an analogy to the phi-phenomenon upon which the motion picture process is based, and also to walking in which each contact with the earth represents a beat and the swing of the foot represents a phase of movement.

   Then we observe the manner of the beat or pulse, which brings us to the idea of accent or stress; this can be related to the basic qualities of movement we have observed in pre-

vious listening. The vigorous strokes of the Blue Danube Waltz, the light, clockwork action in the first movement of Bach's Brandenburg Concerto No. 2, the total absence of a palpable beat in the first measures of Wagner's Tristan — these represent ways of using the beat or of avoiding it for special purposes of musical communication.

2. The lay listener can appreciate the groupings of beats or pulses. Basically, groupings of two or three beats are easily grasped; these might be associated with poetic meters, such as iambic, trochaic, anapest, etc. Here again, the idea of phases of movement, this time enclosing two, three, or four beats can be illustrated. In such phases, one beat in each group has stronger action; these accents or stresses enclose groups which form heirarchies. This can lead directly to a consideration of symmetrical or balanced phrase structures. At this time we can begin to talk about rhythmic regularity or balance, to show how it is established by repeated metric patterns; we can then show how effective a disturbance of regularity can be. I should like to mention two examples. In the first movement of his Eroica Symphony, Beethoven establishes a rather quick triple meter. At the 25th measure, he suddenly compresses the metric group to duple, throwing the rhythmic action out of joint, into a higher gear; before this imbalance is adjusted, we hear an entire series of fluctuating metric groups, twos, threes, and misplaced threes; this all culminates in a tremendous drive to a dramatic point of arrival. In the opening movement of Stravinsky's L'Histoire du Soldat, two specific metric levels are established. There is a basic duple meter given out by the string bass, a kind of "oompah" figure. Above this steady movement, we hear figures involving many kinds of metric grouping. By focussing in turn upon each element in this rhythmic plan, we can appreciate the wonderful effect that arises from the play of rhythmic balance and imbalance.

It seems to me that any more specific or detailed explanation of meter or rhythm would depend upon the time available and the aptitude of the class. In any case, I think that these would have to be related to the underlying aspects of musical rhythm, the idea of a beat or pulse, the idea of metric groupings, and the play of rhythmic balance and imbalance. It is these that the layman can use directly in his listening.

Another meaningful aspect of musical action is texture. This involves the action of the component parts. Although we usually classify texture as being homophonic or polyphonic, there is a wide range of variation within these general categories, and much overlap between them. Within homophonic texture, we can hear a solo instrument, a melody and accompaniment layout, or a single action in which all voices have essentially the same type of action on different levels. Within polyphonic texture, there is non-imitative polyphony, imitative polyphony, and give-and-take of parts, in which a texture that is essentially melody and accompaniment is animated by lively transfer and sharing

of the principal material, and also by polyphonic elaboration. This is, of course, a combination of the basic types of texture. Listening for the play of textures in a string quartet or symphony is one of the most fascinating musical games for the layman. As he listens for the action of the component voices, he becomes more and more alert to the treatment of motivic material, and understands how the life of a motive is bound up in its patterns of textural action. Also, in listening for texture, we can point to the action of the outer voices to show how they assume the principal burden of melodic movement in much music.

Melody, rhythm, and texture have important salient features which make them quite intelligible to the listener. Harmony, on the other hand, seems to be much more elusive, especially with respect to its larger aspects, such as key definition, modulation, and the relationship of harmony to structure. Still, without some idea of the role of harmony in a composition, the layman will miss some of the most important insights he can obtain into the music he is hearing.

If we treat harmony as that aspect of music which deals with the ways in which tones can be related to each other, apart from melody, rhythm, and texture, we can establish certain concepts that will have permanent meaning for the listener. Harmony, in this way, means much more than a vocabulary of chords or a set of rules for part-writing. Here are some of the basic ideas:

1. The idea of harmonic stability and instability. Certain intervals and chords create a feeling of stability, of rest, of arrival, and are effectively employed at points of arrival. These are perfect fifths, octaves, major and minor triads, and traditionally they have had the value of stability in our harmonic system. Other intervals, such as the tritone, sevenths, ninths, and chords which contain these intervals, give the effect of instability, unrest, and they contribute to the effect of musical movement. Compositions exploiting one or another type of sound will respectively have greater or less effect of motion or action in the harmonic sense. The play between specific types of stability and instability is a powerful agent in the building of musical structure. Awareness of stability and instability in harmony is an essential attitude in listening; it is another door through which one can look into the inner workings of the musical process.

2. The idea of a tonal center. When we hear a series of tones, one tone may assert itself as a point of reference. It may have the prominence of being heard first or last, as in plainsong. Intervallic relationships can also determine tonal centers; this happens when we hear the interval of the perfect fifth. The lower note of this interval stands as a point of reference and can be used to establish a tonal center. Medieval and renaissance music, as well as much contemporary music, make use of this device. Harmonic functions, created by the relationships of whole-steps and half-steps and by the upper and lower fifths of a given tone, are more difficult to

hear. If we isolate the tones 4, 7, 1, and 3 of the major scale, we can demonstrate quite clearly the binding relationship between these tones. The progression is a cadential formula and is the critical factor in the authentic cadence of tonal harmony. By this progression, key definition, as it is heard in 17th-, 18th-, and 19th-century music is projected. This is the most powerful means of creating the impression of tonal center.

3. The idea of cadence. Cadences are points of harmonic arrival. The authentic cadence as full arrival, the half-cadence as intermediate arrival, the deceptive cadence as delayed arrival — these are the effects which can be quite easily demonstrated and, of course, linked to phrase structure. Melody, rhythm, and texture will combine to assist harmony in these arrival effects, and the interaction of these elements must be explained.

4. The idea of shift of tonal center. This is a very subtle point, especially if the shift is the gradual, yet all-important structural shift from the tonic to the dominant in the first period or section of a complete form. Compare the harmonic sound at the beginning and the end of such a section in order to show how the first position represents home, harmonically speaking, while the second position represents departure, calling for continuation and eventual return. Perhaps the process can be clarified by listening for the instant at which the dominant key makes itself felt; this may often be through the intrusion of its own leading-tone. The layout of tonal centers as a structural blueprint for the entire piece, the movement between these as a continuous plan of consequential musical action — these are tremendously important concepts to drive home, even if little skill in hearing these can be developed in the course. Sudden shifts of tonal center, involving striking changes of color, are more easily heard, but as a rule, they have less structural importance than the movement between more closely related keys.

5. Harmonic color or quality of a piece. This creates a harmonic climate within which musical action of different kinds can take place. The open sounds of medieval music, the sweetness of renaissance triad sounds, the interaction of tritone chords and their major or minor triad resolutions we hear in 18th- and 19th- century music, the saturation of tritone dissonances in Wagner's harmony, whole-tone scales, polychordality, atonality, use of microtones and sliding pitches — all these have profound effect upon the music of which they form a part, both with respect to structure and expression.

In this paper I have tried to present theory as a means of developing an understanding of musical action and expression. The basic framework was the interaction of sound, movement, and arrival. Some

specific points about melody, rhythm, texture, and harmony were related to these general criteria. In this approach, we are trying to help the layman listen actively; we want him to know music not only as a set of sensory or emotional impacts, but as an organized, logical discipline which poses an intellectual challenge.

MUSIC THEORY IN TRANSLATION:

A BIBLIOGRAPHY

by

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Frankly, I am relieved that it is unnecessary for me to present here a formal, philosophical discussion of what constitutes "music theory" and its literature, but instead, have only to generalize about the scope of this particular survey. Even those generalizations can be very brief and informal, since the list itself, in all its own brevity, clearly shows the scope settled upon and its occasional vagaries. It may be appropriate, however, to note that the problem of scope here, as always, is bi-dimensional, that the compiler of such a list has to (or should) decide, first, what topics, or what types of subject matter, from what period of time are pertinent to his compilation; and secondly, what the standards of quality are against which he will measure all works considered for inclusion. Though I have wrestled with these theoretical problems for some time, I am avoiding here any formal presentation of decisions regarding them (with the customary appended list of exceptions!), for in the actual work of putting the list together, it was not necessary for me to haggle with myself at great length about whether or not, for example, to include only speculative treatises, omitting those intended for more practical purposes. I have not attempted to draw any clear line between theory and practice, except where the latter touches upon specific media of performance, because no labored distinctions needed to be enforced, it seemed to me, between purely speculative works (Helmholtz), didactic but pioneering works (Fux), didactic but popularizers or paraphrasers (Jeppeson, Albrechtsberger), and didactic but commonplace tracts (Bussler, Paul, Reicha). Nor have I attempted — except again, for those practical works which clearly focus upon a particular medium — to assign any degree of significance to works in translation encountered in the compilation and to eliminate all those falling below a certain mark. I have, instead, included nearly all which have come to my attention — and for several reasons. In the first place, the mere fact that these treatises have been translated into English at all would seem to me prima facie evidence that they were at some time, to some person or persons, "significant," and that they are now, therefore, pertinent to various as-yet-unwritten histories of music theory. Secondly, many of them which are presently considered prosaic, nevertheless transmit with varying degrees of verisimilitude, the teachings of important older theorists such as Mattheson, Kirnberger, et al, many of whose own works have not yet been translated. Thirdly, grouped together, these translations suggest many things, and provide some information, about musicians' attitudes toward theory in English-speaking countries throughout the past two centuries. And finally, there are so few which have to be listed—even if the loosest criteria for inclusion are applied — that,

though the resultant list is comprehensive and could serve adequately as a basis for a number of future studies, it is still not overlong. It is, in fact, depressing in its brevity. (Such a public display of paucity, however, may be desirable at this point, both in order to demonstrate the needs and to encourage potential translators to supply them.)

Following somewhat flexible over-all criteria in collecting citations for this bibliography, I have, nevertheless, searched systematically the various categories of what is commonly considered "music theory" and have listed almost all translations which I encountered of works on harmony, counterpoint, thoroughbass, modal theory, fugue, instrumentation, orchestration, the psychological and physiological responses to musical sounds, and temperament. But, somewhat arbitrarily, I have included, as well, a few of the more famous works on musical practice whose import, it seems to me, extends beyond the performance, or re-creation, of music, back to its actual creation—specifically works which were, at the time they were in circulation and wide use, valuable guides, not only for performers, but also for those who labored to comprehend and organize the raw materials of music, the composers. The list includes, therefore, C. P. E. Bach, Couperin, Frescobaldi, Türk, and others on keyboard performance, Tosi and Carissimi on singing, and Tartini and Leopold Mozart on violin-playing, but excluded are most treatises on interpretation and ornamentation. Quantz's and Hotteterre's works on the flute are listed here, but Boehm's and Otto's works which deal with the construction of the flute —and works of similar intent—are not. Somewhat conversely, I suppose, I have included translations of sections from Mersenne and Praetorius which assay the nature and describe the construction of a great variety of instruments. Finally, I have ignored all the translated works on conducting (Inghelbrecht, Scherchen, et al), as well as the famous treatises on dancing (Arbeau, P. Rameau, et al), most of the works on musical form, and all expositions of purely aesthetic or acoustical theories.

About other problems of scope I have been equally arbitrary, perhaps about some, even whimsical. The subtle problems, for example, of balancing translations of excerpts from "significant" works and complete translations of long but pedestrian tracts, or that of balancing partly-summarized, partly-translated excerpts against literal translations of long but unmomentous treatises, I have solved as simply as possible, merely by including the majority of each—a cavalier and criticizable way of resolving perplexities, perhaps, but one which prevents dilution or diminution of the intended comprehensiveness of this survey. But as a consequence, the user is apt to find a few items listed which were perhaps better ignored. He is free, of course, to do so.

Additions to this list or corrections of items already included will be welcomed by both the editor and myself. Truly, the absence from the bibliography of works by theorists of unquestioned stature, such as Zacconi, Werckmeister, Gafori, Prosdocimus de Beldemandis, Virdung, Johannes de Grocheo, Philippe de Vitry, and scores of others is distressing, and the superfluity of translations of works by lesser writers is regrettable, but through the efforts of periodicals such as

this journal—through their publication of surveys such as this one, and by the encouragement they offer musicians who are at work translating the theoretical "Denkmäler"—perhaps the picture in the next few years will be measurably brightened. Indeed, we might even hope that the rate of translation soon will be so great that within a few years this guide will be totally obsolete.

A few words are needed here respecting the format and mechanics of the list.

1. Sources. I have utilized fully the resources of the Vassar Library, of course, and whenever possible have examined carefully each item listed below. But many citations have been drawn from common secondary sources—encyclopedias (Groves, Fétis), library catalogues (Boston, British Museum, Library of Congress), private library catalogues (Cortot, Wolffheim), current lists in periodicals and annuals (NOTES, Jahrbuch... Peters, Acta, the Music Index), standard histories (Reese MMA and MR, Lang), and standard bibliographies (Forkel, Becker, Lichtenthal). The opportunity to examine more theoretical works in English, and to compare more of them with the older foreign language treatises would surely yield additional information about what has been translated and/or paraphrased where and by whom, but such a sophisticated detective job is, more appropriately, a second step, while this effort—predominantly a search of the secondary sources—is a natural, initial one.

2. Bases for translations cited. For almost every translation, I have tried to note the supposed title and date of the work from which the English version was prepared; in the case of those treatises included in Coussemaker and Gerbert's Scriptores, even citations of the pages covered have been given. I say "supposed," for often translators are not explicit about which manuscript or edition they have used, and though an attempt was made to secure thorough documentation whenever it was impossible to collate a particular translation with all the possible sources for it, in a few instances, documentation was completely lacking, and the work which is noted as the original may be incorrect or the wrong edition of the original.

3. Variants. For works before 1900 and for works which I consider extremely important, I have tried to set out in detail all variant editions of the extant English translations, but for lesser works (e.g. Richter's) I have sometimes cited only the first and last editions.

4. Abbreviations. To save space, some abbreviations are used throughout the list. For some reference works used, and for locations of translations: Arnold = his The Art of Accompanying from a Thorough-Bass (Oxford U. P., 1931); BrusF = catalog of the Fétis library in the Brussels Bibliothèque Royale (Paris, 1877); CS = Coussemaker, Scriptores; EiT = the Quellen-Lexikon; Gal/Reid = Gal's catalog of the Reid library, Univ. of Edinburgh (1941); GS = Gerbert, Scriptores; Hawkins = his History of Music, 1875 ed.; JoMT = this, the Journal of Music Theory; Mann = The Study of Fugue, by Alfred Mann (Rutgers, 1958); MD = Musica Disciplina; MQ = Musical Quarterly; Reese = his Four-Score Classics of

Music Literature (N.Y., 1958); Riemann/Spratt (see under Riemann in the bibliography itself); Shirlaw = his Theory of Harmony (repr., 1955); Strunk = his Source Readings (Norton, 1950). For general abbreviations used, see the glossary on page 96.

ADAM VON FULDA [Musica. GS III, 329-81] p tr and ann in Riemann/Spratt:123-25.

AGAZZARI, AGOSTINO [Del Suonare sopra il basso con tutti stromenti. 1607. i.e., the preface to his Sacrae Cantiones, Lib. II. 1609] sum long p tr and ann, Arnold:67-74 et passim.

ALBERT, HEINRICH [Ander Theil der Arien ... 2d ed, 1643. Preface] His rules for basso continuo tr and ann, Arnold:127-31.

ALBRECHTSBERGER, JOHANN GEORG [Sämtliche Schriften. ⌜1838⌝] Collected writings on thorough-bass, harmony and composition, ed by Seyfried. Tr by Sabilla Novello; musical p rev by Vincent Novello. L., 1855. 3v.

___ ____(same) L., Novello; B., Ditson ⌜187?⌝ 3v.

___ [Gründliche Anweisung zur Komposition. 1790] Methods of harmony, figured bass, and composition. Tr from the last Ger ed, as augm and arr by Seyfried, with the remarks of M. Choron. Tr from the last Paris ed, by Arnold Merrick. First Engl ed. L., R. Cocks ⌜1834⌝ 2v.

___ ____(same) 2d ed. L., Cocks, 1844. 2v.

___ ____p of Albrechtsberger's tract with add by Seyfried tr in Mann: 213-262 et passim.

___ [Kurzgefassete Methode den Generalbass. 1792] Principles of accompaniment or thorough-bass. Tr with ann by J. Jousse. L., ⌜1815⌝ (EiT)

___ [?] A Treatise on the use of the diminished & superfluous intervals. Tr by ? L., ⌜s. d.⌝ (not verified; in Gal/Reid catalog)

ALEMBERT, JEAN LE ROND D' [Elémens de musique, théorique et pratique. 1752] Elements of music, theoretical and practical, tr from the Fr with complete additions by ⌜Dr. Blacklock⌝ in v.?, p. 500-551 of Dobson's Encyclopedia, Phila., 1798. (with 10 plates)

ALSTED, JOHANN HEINRICH [Elementale musicum. 1611] Templvm mvsicvm: or, The musical synopsis, of the learned and famous ... being a compendium of rudiments both of the mathematical and practical part of musick. Tr by John Birchensha. L., Dring, 1664. (6th

part of Elementale only)

ANON. [Quatuor principalia. c. 1380] Tr by Gilbert Reaney announced for publ soon; see Reese. (formerly attr to Tunstede)

___ [Scholia enchiriadis. GS I, 184-96] "Of Symphonies" tr in Strunk: 126-38.

ANON. IV [De mensuris et discantu. c. 1275 CS I, 327-65] tr and ed by Luther Dittmer. Brooklyn, N. Y., Institute of Medieval Music, c1959. 73 p.

ANON. XI [Tractatus de musica plana et mensurabili. CS III, 416-75] xrpts in Riemann/Spratt:96-7.

ANON. XII [De contrapuncto. CS III, 475-95] xrpts in Riemann/Spratt: 99-100.

ANTONIOTTO, GIORGIO L'Arte armonica; or, a treatise on the composition of musick ... L., Printed by J. Johnson, 1760. 2v.

ARISTIDES [De Musica] p tr and sum in Hawkins: Lib. I, p. 31-32; Lib. II & III, p. 81-3. Some of Meibom's comments on this tract tr, p. 21-3.

ARISTOXENUS [Armonika Stoicheia] The Harmonics of Aristoxenus; ed with tr notes intro and index by Henry S. Macran. Oxford, Clarendon Press, 1902. 303p.

___ ____ Lib. I, tr by Dr. Callcott. Br. Mus. MS Add. 27647, ff. 2-6.

ASIOLI, BONIFACIO [Principj elementari di musica. 1809] A compendious musical grammar in which the theory of music ... tr by J. Jousse.. L., 1825.

ARON, PIETRO [Trattato della natura e cognizione di tutti gli toni di canto figurato. 1525] p tr Strunk:205-18.

ARTUSI, GIOVANNI MARIA [L'Artusi, ovvero, Delle imperfezioni della moderna musica. 1600] "Second discourse," in Strunk:393-404.

AUGUSTINUS, AURELIUS De Musica, a synopsis, by W. F. Jackson Knight. L., Orthological Institute [1949?] 125p.

___ ____ St. Augustine on music. Books I-VI. Tr by R. Catesby Taliaferro. Annapolis, St. John's Bookstore, c1939.

BACH, JOHANN SEBASTIAN [from Anna Magdelena Bach's Clavier Book. 1725] Some most necessary rules of thorough-bass. Tr in David and Mendel's Bach Reader. N. Y., 1945, p. 390-1.

___ ___ Tr in Spitta, Life of Bach, II, 347-8.

___ [Vorschriften und Grundsätze zu vierstimmigen Spielen des General-Bass oder Accompagnement. 1738] Tr in Spitta, Life of Bach, I, 315-47.

___ ___ Tr in David and Mendel's Bach Reader, p. 392-8.

BACH, KARL PHILIPP EMANUEL [Versuch über die wahre Art das Clavier zu Spielen. 1753-62] Essay on the true art of playing keyboard instruments, tr and ed by William J. Mitchell. L. & N.Y., Cassell and Norton, 1949. xiii, 449p.

___ ___ (II. Theil. 1762) extensive sum tr ann and exx in Arnold; 29-94, 326-7, 414-35, 468-81, 527-33 et passim.

BANCHIERI, ADRIANO [Dialogo musicale sicuramente sopra un basso continuo. i.e., p. 59-65 in his L'Organo suonarino. 1611] long tr and ann in Arnold: 82-90 et passim.

BARBIERI, C. F. A new treatise on theori-practical, fundamental & thorough bass, also on composition... 2d ed., greatly augm. & improved. 1st ed. was Pub.d (sic) in Paris. Edinburgh, Printed for the author ⌜c. 1800⌝ 84p.

BASLER, CHARLES [Reisekarte für das Reich der Töne. 1850] Pictorial representation of the science, harmony, and relationship of chords, tr by G. F. Flowers. L. ⌜s.d., 1850?⌝ (Fétis says 1850, 4°; above is 8°)

BECKER, CONSTATIN JULIUS A concise treatise on harmony, accompaniment and composition. L., 1845. (Tr of Kleine Harmonielehre, 1844?)

BEETHOVEN, LUDWIG VAN [Studien im Generalbasse... 1832] Studies in thoroughbass, counterpoint and the art of scientific composition, collected from the autograph posthumous manuscripts of the great composer, and first publ by Ignatius von Seyfried; tr and ed by H. H. Pierson (E. Mannsfeldt). Leipzig, N.Y., Schuberth, 1853. xii, 328, 98p.

BEMETZRIEDER, ANTON Nouvelles leçons de clavecin ou instruction générales sur la musique vocale et instrumentale ... suivies d'une nouvelle explication ... des différens genres de musique. 2d ed. New Lessons for the harpsichord ... L., 1783. (Publ in Fr and Engl)

___ Précis d'une nouvelle méthode de musique... Compendium of a new method of music... L., 1782. (Publ in Fr and Engl)

___ Précis d'une nouvelle méthode pour enseigner les principes de la musique ... Abstract of a new method of teaching the principles of music. L., 1782. (Publ in Fr and Engl)

___ Principes et méthode de musique... Principles and methods of music. L., 1782. (Publ in Fr and Engl)

___ [Traité de musique. 1776] Music made easy to every capacity, in a series of dialogues; being practical lessons for the harpsichord... so little difficult, that any person ... may play well; become a thorough proficient in the principles of harmony; and will compose music ... in less than twelve-month. Publ in Paris, (with a Preface) by the celebrated Monsieur Diderot, the whole tr and adapted ... by Giffard Bernard. L., W. Randall, 1778. vi, iv, 249p.

___ ___ (same) [L.] Printed by G. Bigg for Messrs. Birchall and Andrews, 1785. viii, iv, 249p.

BERLIOZ, HECTOR [Traité d'instrumentation] A treatise on modern instrumentation and orchestration, to which is appended the Chef d'orchestre. Tr by M. C. Clarke. New ed rev and ed by J. Bennet. L., Novello [18--?]

___ ___ enl and rev by Richard Strauss. Tr by Th. Front. N.Y., Kalmus, c1948.

BERNARDI, GIAN GIUSEPPE [Contrappunto. 1904] Counterpoint, tr by Claude Landi. L., Kegan Paul; N.Y., Dutton, 1921. viii, 206p.

BERTEZÉN, SALVATORE [Estratto dell' opera de Principj della musica...] Extract of the work entitled Principles of music. L., Printed for the author, 1782. 46p. (Publ in It and Engl parallel cols.)

BESARD, JEAN BAPTISTE [De modo in testudine studendi libellus. 1603] "Necessarie observations belonging the lute and lute-playing," the Preface to John and Robert Dowland's Varietie of Lute Lessons, 1610.

BIANCIARDI, FRANCESCO [Breve regola per imparar a sonare sopra il basso con ogni sorte d'instrumento. 1607] sum long xrpts tr and ann in Arnold:74-80, 82.

BOETHIUS [De musica] completely summarized with long tr in Hawkins:117-24. Another p tr p. 16-17.

BORGHESE, ANTONIO D. R. A new and general system of music; or, The Art of music, deduced from new and the most simple principles; containing the theory and practice of the composition of melody and harmony, of thorough-bass, and of vocal and instrumental music. Tr from the orig It by John Gunn. L., Printed for the author, 1790. (Br. Mus. catalog says It orig never publ. EiT dates 1795; another ed?)

BROSSARD, SEBASTIAN DE [Dictionnaire de musique. 1701] A musical dictionary; ...including the historical, theoretical, and prac-

tical parts of music. ⌜Tr⌝ by James Grassineau[1]. L., J. Wilcox, 1740. xii, 347p.

_____ New ed to which is added an Appendix selected from the Dictionaire de musique of J. J. Rousseau. L. J. Robson, 1769. vii, 347, 52p. (NB: theoretical discussions under, e.g., "Systems, Genus, Octave, etc!")

BUSSLER, LUDWIG [Musikalische Elementarlehre?] Elementary harmony. Tr from the 2d Ger ed by Th. Baker. N.Y., G. Schirmer ⌜c1891⌝ viii, 227p.

___ ___(same) 1906.

___ [Musikalische Elementarlehre] Elements of notation and harmony, with 85 exercises. Tr from the 5th rev and enl ed. N.Y., G. Schirmer, 1890. viii, 131p.

_____ [Praktische Harmonielehre] Practical harmony, tr by N. Gans, from the 3rd rev and enl Ger ed. Berlin, Habel, 1894.

___ ___(same) Latest rev ed. Phila., Natch music, c1896.

___ [Musikalische Formenlehre] The theory and practice of musical form. Tr by J. H. Cornell. N.Y., G. Schirmer, 1883. 260p.

_____ (2. Aufl., 1894) Musical form, tr by N. Gans. Berlin, Habel, 1894.

CARISSIMI, GIOVANNI GIACOMO [Ars Cantandi. 1689] A brief discourse on the Italian manner of singing, wherein is set down the use of the graces in singing ... etc. L., ⌜n. d. ?⌝

_____ The art of singing; a translation in Engl of "Ars Cantandi," from an ed of 1693 of a Ger tr of the orig in It by J. R. Douglas. ⌜n. p.⌝ 1949. (Thesis, Union Theological Seminary)

CASSIODORUS [Institutiones] section on the modes reprinted in Strunk: 87-92, from Mynor's ed for the Clarendon Press, 1937.

CATEL, CHARLES SIMON [Traité d'harmonie. 1802] A treatise on harmony. Tr by Lowell Mason. B., 1832. vi, 156p.

___ ___ L., Novello, 1854. (tr by ?)

___ ___ rev by J. Pittman. L., 1855.

___ ___ Tr by Speranza and T. Westrop. L., Sheard, 1875.

1. Not entirely a tr of Brossard, nor perhaps, even mainly. See my Music Lexicography, 1958, p. xvi-xix.

CENSORINUS [De Die Natali] chs. 10-13 on music, partly tr in Hawkins: 87-88

CERONE, PEDRO [El melopeo y maestro. 1613] xrpts tr in Hannas, Ruth, "Cerone, Philosopher and teacher," in MQ, 21, 1935:408-22, incl some rules for counterpoint and harmony.

___ ____ p. 685-91 of Book XII tr in Strunk:263-73.

CHERUBINI, LUIGI [Course de contrepoint et de fugue. 1835] A course in counterpoint and fugue, tr by J. A. Hamilton. L., Cocks, 1837. 2v.

___ ____ A treatise on counterpoint and fugue, tr by Mrs. C. Clarke. L., Novello, 1854. 128p.

___ ____(same) New ed, rev by J. Bennett. L., Novello; N.Y., Gray [190-?]

CHEVÉ, EMILE JOSEPH MAURICE The theory of music. Tr and appendices added by G. W. Bullen. L. [187?]

CLEONIDES [Introduction to harmonics] complete tr in Charles Davy's Letters, addressed chiefly to a young gentleman, upon subjects of literature: including a tr of Euclid's section of the canon; and his treatise on harmonic [i.e., Cleonides' ...] Bury St. Edmunds, J. Rackham, 1787. 2v.

___ ____ long p tr in John Keeble's The theory of harmonics: or, an illustration of the Grecian harmonic. L., Printed for the author [1784]

___ ____ tr complete in Strunk:34-46

COUPERIN, FRANÇOIS [L'Art de toucher le clavecin] The art of playing the harpsichord, tr by M. Roberts. Leipzig, Breitkopf & Härtel, 1933. 39p.

CZERNY, CARL Letters on thorough-bass, with an appendix on the higher branches of musical execution and expression. Tr by J. A. Hamilton. L. [1846] 105p.

___ Letters to a young lady on the art of playing the pianoforte, tr by J. A. Hamilton. L., R. Cocks [1838]

___ ____(another) [1846] v, 82p.

___ ____(another) N.Y., S. T. Gordon, 1868. 60p.

___ ____(another) Phila., Lee & Walker, c1884. 16p.

___ ____(another) B., Ditson [187-] 56p.

___ New exercises on harmony and thorough bass ... forming a practical appendix to his celebrated letters. L., R. Cocks [1846] 32p.

___ [Vollständige theoretisch-praktische Kompositionslehre, op. 600] School of practical composition; or, Complete treatise on the composition of all kinds of music ... together with a treatise on instrumentation. Tr by John Bishop. L., R. Cocks [1848?] 3v.

___ ___ Treatise on the composition of music, tr by John Bishop. L. [n. d., 1849] 3v.

DAUBE, JOHANN FRIEDRICH [General-bass in drey Accorden. 1756] xrpts in Arnold:371, 388-91.

DESCARTES, RENÉ [Compendium musicae. 1618] Renatus Des-Cartes excellent compendium of musick: with necessary and judicious animadversions thereupon. By a person of honour. L., H. Moseley, 1653. 8, 94p.

___ ___ brief sum of passages on intervals and temperament, with short tr in Shirlaw:57-62.

DONI, GIOVANNI BATTISTA [De Praestantia musicae veteris libri tres. 1647] xrpts tr in Hawkins:396 (on Vicentino and genera); 630-35 (a sum)

EUCLID [Sectio canonis] tr in Charles Davy's Letters to a young gentleman ... see here under CLEONIDES.

FÉTIS, FRANÇOIS JOSEPH [Méthode elémentaire et abrégée d'harmonie et d'accompagnement. 1824] An elementary and abridged method of harmony and accompaniment ... by the study of which amateurs will speedily be able to accompany the figured bass and score. Tr by J. Bishop. L., Cocks [1835]

___ ___(another; tr of same work?) How to play from score. A treatise on accompaniment from score on the organ or pianoforte, tr by Alfred Whittingham. L., Reeves [1888] vii, 56, 40p.

___ [Manuel des compositeurs, directeurs de musique. [1837]] A manual for composers ... tr by ? L. [n. d.] (not verified)

___ [Traité complet de la théorie et de la pratique de l'harmonie. 1844] sum and lengthy tr in Shirlaw:335-51.

FORKEL, JOHANN NICOLAUS [Ueber der Theorie der Musik. 2d ed, 1777] tr by Dr. Callcott, 1804. Br. Mus. MS Add. 27690, ff126-158b.

FRANCO OF COLOGNE [Ars cantus mensurabilis. c. 1260. CS I, 117-35] tr complete in Strunk:139-59.

FRESCOBALDI, GIROLAMO [Toccate e partite, d'intavolatura di cimbalo, Lib. I. 1614] Preface tr complete in Dolmetsch (Interpretation):4-5, and in Dannreuther's Ornamentation:48-49.

FUX, JOHANN JOSEPH [Gradus ad Parnassum. 1725] Practical rules for learning composition ... written orig in Latin by John Joseph Fux. L., Preston [1791?] 49p. (Mann calls it "a free paraphrase")

___ ___(another) Steps to Parnassus; the study of counterpoint, tr and ed by Alfred Mann with the collaboration of J. St. Edmunds. N.Y., Norton, c1943.

___ ___p tr in Strunk:535-63

___ ___(another) "The Study of fugue; a dialogue." Tr and ed by Alfred Mann, in MQ 36, 1950, p. 525-39; 37, 1951, p. 28-44, 203-19, 376-93. Reprinted in his book, The Study of fugue, c1958, p. 75-138.

GAFORIO, FRANCHINO [Apologia ... adversus Joannem Spatarium. 1520] p of this reply to Spataro's Tractato & utile et breve regule are in Hawkins:288-90.

___ [Practica musicae. 1496] p tr in Hawkins. Lib. I on p. 131 (exx 132-33) and Lib. II, cap. i-iv, vi on p. 278-82 (on notation).

GEVAERT, FRANÇOIS AUGUSTE [Nouveau traité d'instrumentation. 1885] A new treatise on instrumentation, tr by E. F. E. Suddard. Paris & Brussels, Lemoine; L., Gérard [1906?] 339p.

GLANVILLE, called BARTHOLOMAEUS ANGLICUS [De Proprietatibus Rerum. 1366] xrpts on music and musical instruments in Hawkins: 267-71. Engl tr of the whole work, of which ch 19 deals with music, were publ 1398 and 1582.

GLAREANUS, HENRICUS [Dodecachordon. 1547] tr complete in "Henricus Glareanus: Dodecachordon," by H. M. Miller. unpubl Ph.D diss, Univ of Michigan, 1950.

___ ___Book III, ch 24 in Strunk:219-27.

___ ___Book I, ch 10, xrpts in Hawkins:28. Book I, ch 16 and 21, xrpts in Hawkins:315-18 (with exx to 323)

GRASSINEAU, JAMES see BROSSARD

GUIDO ARETINUS [Argumentum novi cantus inveniendi] xrpts (important) in Hawkins:163-4.

___ [Micrologus. GS II, 1-61] Ch XV, on modulation, in "Musica rhythmica and musica metrica in antique and medieval theory," by R. L. Crocker, in JoMT, II, 1958, p. 12-15, with discussion.

___ ___xrpts in Hawkins:165-68.

___ ___see also: Engl tr of Ornithoparcus' Micrologus (below), as well as brief xrpts and sum of Guido's in articles by van Waesberghe in MD, V, 1951, p.15-53; 55-63.

___ [Prologus antiphonarii sui. GS II, 34-37] tr complete in Strunk: 117-25.

GUILELMUS MONACHUS [De Preceptis artis musice et pratice. CS III, 273-307] p tr and sum in Riemann/Spratt:102-109.

HANDLO, ROBERT DE [Regulae cum maximis Magistri Franconis cum additionibus aliorum musicorum, 1326. Br. Mus. MS Add. 4909 ff 1-11^{r}] tr and ed by Luther Dittmer. Brooklyn, N.Y., Institute of Medieval Music, c1959. 44p.

HAUPT, KARL AUGUST. Theory of counterpoint, fugue and double counterpoint, tr from the orig MS by H. Clarence Eddy. N.Y., G. Schirmer⌜c1876⌝79p.

HAUPTMANN, MORITZ [Die Natur der Harmonie und Metrik. 1853] The nature of harmony and metre, tr and ed by W. E. Heathcote. N.Y., Novello; L., Swan Sonnenschein, 1888. xlviii, 352p.

___ ___(same) 2d ed. L., 1892.

___ ___sum with numerous quotes from Heathcote's tr, or tr from the orig, in Shirlaw:352-72.

HEINICHEN, JOHANN DAVID [Der General-bass in der Composition. 1728] extensive sum, p tr with ann and exx in Arnold:255-69, 332-44, 383, 448-63, 731-5 et passim.

HELMHOLTZ, HERMANN LUDWIG FERDINAND VON [Lehre von den Tonempfindungen. 1863] On the sensations of tone as a physiological basis for the theory of music, tr by A. J. Ellis. L., Longmans, Green, 1875. (from the 3rd Ger ed)
Other eds:
L., Longmans, Green, 1885. (from the 4th and last Ger ed of 1877)
3rd ed⌜reprinted from the 2d⌝ibid, 1895.
4th ed ⌜reprinted from the 3rd⌝N.Y., Longmans, 1912.
5th ed ⌜reprinted from the 4th⌝1930.
6th ed ⌜reprinted from the 5th⌝1948.
2d Engl ed ... 1885 reprinted with a new intro (1954) by H. Margenau. N.Y., Dover⌜1954⌝

HERMANNUS CONTRACTUS [Musica. 11th c.] Musica Hermanni Contracti. Presented from an unedited source and collated with the Vienna Ms no. 51 and the eds of Gerbert and Brambach, with parallel Engl tr by Leonard Ellinwood. Rochester, Eastman School of Music, 1936. 71p.

HINDEMITH, PAUL [Unterweisung im Tonsatz] The craft of musical composition. Vol. I, theoretical part tr by Arthur Mendel; Vol. II, exercises in 2-part writing, tr by Otto Ortmann. N.Y., Associated Music Publ, 1941-42.

____(another) Tr by John R. Halliday in his Ph.D diss, Eastman School of Music, 1941: "Paul Hindemith, the theorist," p. 90-345.

HOFMANN, RICHARD [Praktische Instrumentationsschule. 1893] Practical instrumentation, tr by R. H. Segge. Vol. I-VII. Leipzig, Dörffling & Franke, 1898.

HOTTETERRE, JACQUES [Principes de la flute traversiere. 1707] The rudiments or principles of the German flute. Explaining after an easy method everything necessary for a learner ... Wrote in Fr ... & faithfully tr into Engl. L., I. Walsh [1729] 36 numb

____(another) "The newest method for learners on the German flute," Pt. III of Peter Prelleur's Modern Musick-master, London, 1738.

(This free tr, in turn, was paraphrased in "The Compleat tutor for the German flute, containing the best and easiest instruction ... L., H. Waylett [c. 1745]

HUCBALD [De institutione harmonia. GS I, 125-47] sum and brief xrpts tr, plus 4 facs p. in "Hucbald as musician and theorist," by R. Weakland in MQ 42, 1956, p. 66-84.

HUMMEL, JOHANN NEPOMUK [Ausführliche theoretisch-praktische Anweisung zum Pianofortespiel. 1828] A complete theoretical and practical course of instructions on the art of playing the pianoforte. L., T. Boosey [1828?]

D'INDY, VINCENT [Cours de composition musicale, 1903-33] complete tr in unpubl Ph.D diss, Univ of Rochester, 1946, by M. Montgomery: "A comparative analysis (and tr) of Vincent d'Indy's Cours ..."

JACQUES DE LIÈGE [Speculum musicae. CS II, 384-5, 427-32] tr of p of Bk. VII in Strunk: 180-90. Formerly attr to Jean de Muris; see Reese.

JADASSOHN, SALOMON [Elementar-Harmonielehre. 1895] Elementary principles of harmony. Leipzig, Breitkopf & Härtel, 1895.

___ [Der Generalbass. 1901] Thoroughbass. Instruction in the performance of the continuo parts in the works of the old masters. Engl Ger and Fr text. Leipzig, 1901.

___ [Harmonielehre. 1883] A manual of harmony, tr by Paul Torek and H. B. Pasmore. Leipzig, Breitkopf & Härtel, 1884. (Issued in various eds through the 8th, rev and enl, 1908.)

___ ___ A manual of harmony, tr from the 3rd rev and augm Ger ed by Th. Baker. N.Y., G. Schirmer, c1893. (Reprinted many times, 1895, 1903, etc.)

___ [Kanon und Fuge. 1884] A course of instruction on canon and fugue, tr by Gustav (Tyson-) Wolff. Leipzig, Breitkopf & Härtel; N.Y., G. Schirmer, 1884. (2d ed ibid, 1904; 3rd ed ibid, 1929)

___ [Kontrapunkt. 1884] Manual of simple, double, triple and quadruple counterpoint, tr by Gustav (Tyson-) Wolff. Leipzig, Breitkopf & Härtel; N.Y., G. Schirmer, 1897. (Tr from 3rd rev Ger ed. Other eds: 1902 (reprint), and 2d ed, 1904.)

___ [Lehrbuch der Instrumentation. 1889] A course of instruction in instrumentation, tr by H. P. Wilkins. Leipzig and N.Y., Breitkopf & Härtel, 1899.

___ [Das Tonbewusstsein. 1899] A practical course in ear training. Leipzig, Breitkopf & Härtel, 1899.

JEPPESEN, KNUD [Kontrapunkt. 1930] Counterpoint: the polyphonic vocal style of the 16th century. Tr and intro by Glen Haydon. New York, Prentice Hall, 1939. xviii, 302p. (From the Ger ed of 1935; 2d printing, 1949)

JOHANNES DE GARLANDIA [Optima introductio. CS III, 12-13] p tr in Riemann/Spratt:59-60.

JOHANNES DE MURIS [Ars discantus. CS III, 68-113] sum ann and sizeable tr in Riemann/Spratt:76-84.

___ [Ars novae musicae, 1319. GS III, 292-7, 300-01] Bk II p in Strunk: 172-9.

___ [De discantu et consonantiis. GS III, 306-7] p tr in Riemann/Spratt: 72

KEPLER, JOHANNES [Harmonices mundi] xrpts tr in Hawkins:618-20.

KIRCHER, ATHANASIUS [Musurgia universalis... 1650] xrpts from T.I tr in Hawkins:35-36, 101-2, 637-8, 639-40; and from T. II, p.97-8. (A synopsis of the whole work is given by Hawkins p. 635-40)

KIRNBERGER, JOHANN PHILIP [Grundsätze des Generalbasses als erste Linien zur Composition. 1781] sum tr ann exx in Arnold: 312-18, 395-7, 789-792, et passim.

KISTLER, CYRILL [Harmonielehre. 1879] System of harmony, tr by A. Schreiber from the 2d Ger ed. L., Haas, 1899. ("2d Ger ed" not publ until 1903!)

KOECHLIN, CHARLES [Précis des règles du contrepoint. 1927] A summary of the rules of counterpoint, tr by Ernest Quinan. Paris, Heugel, 1927. 137p.

KOLLMANN, AUGUST FRIEDRICH CHRISTOPH. Remarks on what Mr. J. B. Logier calls his new system of musical education. Written and tr from the Ger by A. F. C. Kollmann. 2d ed. L., 1824. viii, 49p.

KORNERUP, THORVALD OTTO. Musical acoustics based on the pure third-system, tr by P. A. Petersen. Copenhagen and Leipzig, W. Hansen, 1922. 112p.

KRYZHANOVSKII, IVAN IVANOVITCH. The biological bases of the evolution of music, tr by S. W. Pring. L., Oxford U. P., 1928.

KUHNAU, JOHANN [Biblische Historien...] Six Biblical sonatas for keyboard (1700) with the original preface and introductions in Ger (facsimile) and Engl. Tr and ann by Kurt Stone. N. Y., Broude ⌜c1953⌝ (Preface:viii-xv.)

LEMOINE, HENRI [Traité d'harmonie pratique. 1836] A treatise on practical harmony, tr by Wm. Aspull. L., Wessel⌜s. d.⌝

LENORMAND, RENÉ [Étude sur l'harmonie moderne. 1912] A study of 20th-century harmony. A treatise and guide, tr by H. Antcliffe. L., J. Williams⌜c1915⌝ xiv, 142p.

LE ROY, ADRIEN. A briefe and easye introduction to learne the tableture, to conduct and dispose the hands unto the lute ... Tr by John Alford. L., 1568.

___ A briefe and plaine instruction to set all musicke of eight diuers tunes in tableture for the lute. With a briefe instruction how to play on the lute by tableture, to conduct and dispose thy hand vnto the lute, with certaine easie lessons for that purpose. ... All first written in French ... and now trans. by F. Kn. Gentleman. L., Ihon Kyngeston for James Rowbothame, 1574.

LOBE, JOHANN CHRISTIAN [Katechismus der Kompositionslehre. 1872] Catechism of composition, tr by F. R. Ritter. N. Y., Schuberth⌜c1868⌝ vii, 183p.

___ ___(same) Rev and ed by Th. Baker. ⌜2d and rev ed⌝ N. Y., G. Schirmer, c1891. vii, 200p.

___ [Katechismus der Musik. 1851] Catechism of music, tr by F. R. Ritter. N. Y., J. Schuberth⌜c1867⌝ vii, 126p.

___ ___(another) Phila., F. A. North⌜1876?⌝ 130p.

___ ___(another) ed and comp by Oscar Coon. Newly improved and up-to-date ed. N. Y., C. Fischer⌜1905⌝ vi, 137p.

LOEWENGARD, MAX [Lehrbuch der Harmonie. 1892] Harmony, tr by H. M. Peacock. L. A. Owen; Berlin, Stahl [1905] iv, 108p.

___ ___(another) Tr by F. Liebling. [s.p.] 1907. (according to Baker's Biographical Dict., not verified)

___ ___(another) Harmony modernized: a course equally adapted for self-instruction or for a teacher's manual. Tr from the 6th augm and thoroughly rev Ger ed, by Dr. Th. Baker. N.Y., G. Schirmer, 1910. vi, 145p.

___ [Lehrbuch des Kontrapunkts. 1902] A manual of counterpoint, tr from the Ger by F. L. Liebling. Berlin, Dreililien, 1907.

MARCELLO, BENEDETTO [Il Teatro alla moda... c. 1720] Il teatro alla moda, or, a sure and easy method to compose well and to produce Italian operas in the modern fashion... Tr and ann by Reinhard G. Pauly in MQ, 34, 1948, p. 371-403; 35, 1949, p. 85-105.

MARCHETTUS DE PADUA [Pomerium. c. 1318. GSIII, 170-8] Bk II tr in Strunk: 160-171. (Musical exx from CS III, 5-8)

MARPURG, FRIEDRICH WILHELM [Abhandlung von der Fuge. 1753-54] large p in Mann:142-212 from Pt. I, ch 1-6; Pt. II, ch 7, et passim.

___ [Handbuch bey den Generalbasse. 1755-62] xrpts tr and exx in Arnold:485-496, et passim.

___ [Kritische Beiträge zur Musik] short sum with very brief tr in Shirlaw: 308-16 with bits from other Marpurg works: Systematische Einleitung, 1757, and the Handbuch bey dem Generalbasse, 1755-58.

MARTINI, GIAMBATTISTA [Esemplare o sia saggio fondamentale pratico di contrappunto fugato. 1774-75] Essay on counterpoint [from v. 1?] tr by Dr. Callcott, 1803. Br. Mus. MS Add. 27686, ff13-22b.

___ ___ long p from v. 2 in Mann:263-314, et passim.

MARX, ADOLF BERNHARD [Allgemeine Musiklehre. 1839] General musical instruction; an aid to teachers and learners in every branch of musical knowledge. Tr by George Macirone. B., Ditson [n. d.] 139p.

___ ___(same) L., N.Y., Novello, 1854. 131, 8p.

___ ___(another) The universal school of music. Tr from the 5th ed of the orig Ger by A. H. Wehran. L., R. Cocks, 1853. xv, 367p.

___ [Die Lehre von der musikalischen Composition. 1837-47] The school of musical composition (with additional notes and a special preface for the Engl ed) tr from the 4th ed of the orig Ger by Augustus Wehran. Vol. I. L., R. Cocks, 1852. xxiv, 541p.

___ ___(another) Theory and practice of musical composition, tr from the 3rd Ger ed. Ed by Herman Saroni. N.Y., Huntington, 1852. 406p.

___ ___(another) The theory and practice of musical composition. 5th American ed, with an appendix and notes by Emilius Girac. N.Y., Mason ⌜c1854⌝ 406, vi, ⌜3⌝-165p.

___ ___(another) from the 3d Ger ed and ed by Herrmann (sic?) S. Saroni. 6th American ed. N.Y., Mason, 1860, c1854.

___ [Die Musik des 19. Jahrhunderts. 1855] The music of the nineteenth century and its culture. Method of musical instruction, tr by A. H. Wehran. L., R. Cocks, 1855.

MASSIMINO, FEDERICO [Nouvelle méthode pour l'enseignement de la musique. 1819] Method of musical instruction: singing-tutor on an entirely new plan... with exercises in harmony by John Green. L., L. Harrison ⌜s.d.⌝

MATTHESON, JOHANN [Kleine General-Bass-Schule. ⌜1734⌝] A complete treatise of thorough bass, containing the true rules with a table of all the figures & their proper accompanyments ... L., P. Hodgson ⌜17--⌝32p. (NB: EiT cites this as a tr of the Grosse General-Bass-Schule, a misattribution corrected in Reese, q.v.)

___ ___sum, xrpts tr, ann and exx in Arnold:270-83, et passim.

___ [Organisten-Probe. 1719] Johann Mattheson's Forty-Eight thorough-bass test-pieces; translation and commentary. A diss by Harvey P. Reddick available on microfilm from University Microfilms (Publ. no. 19715)

___ ___Erläuterungen to the "Test-pieces" sum, tr in part with exx in Arnold:440-48.

___ [Der vollkommene Capellmeister. 1739] Selections from Pt I, ch 3 (Concerning sound and the natural science of music); from Pt II, ch 13 (Species of melody...); and Pt II, ch 4 (Melodic invention) tr in "Johann Mattheson on affect and rhetoric in music," by Hans Lenneberg in JoMT, II, 1958, p.47-84, 193-236.

MENDELSOHN, J. A complete method of musical composition according to the system of A. B. Marx. Vol. I. N.Y., C. Fischer, 1910. iv, 231p.

MERSENNE, MARIN [Harmonie universelle. 1636-37] The Books of instruments, tr by Roger E. Chapman. The Hague, Nijhoff, 1957. 608p.

___ ___xrpts from Lib. III, Des Genres, prop. xi (on Fabio Colonna's system of temperament) tr in Hawkins:598-99.

___ [Harmonicorum Libri XII. 1635] xrpts from Pt. I, prop. xxxiii

and xxxvii; Pt. II, prop. i are tr in Hawkins:604-607. (NB: p. 600-616 of Hawkins are devoted to paraphrases and tr of Mersenne's descriptions of instruments.)

MESSIAEN, OLIVIER [Technique de mon langage musical. 1944] The Technique of my musical language, tr by John Satterfield. Paris, Leduc ⌜c1944, 1956⌝ 2v.

MONTÉCLAIR, MICHEL PIGNOLET DE [Petite méthode pour apprendre la musique. c. 1730] Preface and xrpts from the bulk of the work publ by M. Pincherle in "Elementary musical instruction in the 18th century: an unknown treatise on Montéclair," and tr for publ in MQ, 34, 1948, p. 61-7 by Willis Wager.

MONTEVERDI, CLAUDIO [Il quinto libro de madrigali... 1605] The Foreword with the "Declaration" by his brother ⌜written 1607⌝ in Strunk:405-12.

MOZART, LEOPOLD [Versuch einer gründlichen Violinschule. 1756] A treatise on the fundamental principles of violin playing, tr by Edith Knocker. Pref by Alfred Einstein. N.Y., Oxford, 1948. xxxv, 231p.

MOZART, WOLFGANG AMADEUS [Kurzgefasste Generalbass-Schule. Wien, 181] Practical elements of thorough bass ... tr from the Vienna ed by Samuel Goedbé. L., R. Cocks ⌜c. 1820⌝ (Gal/Reid catalog says "apocryphal!")

NIEDT, FRIDERICH ERHARD [Musikalische Handleitung oder gründlicher Unterricht. Erster Theil: Handelt von General-Bass. 1700] lengthy tr with ann and exx in Arnold:213-36.

ODO OF CLUNY [Enchiridion] tr complete in Strunk:103-116.

ORNITHOPARCUS, ANDREAS [Musicae activae Micrologus... 1517] Andreas Ornithoparcvs his Micrologvs, or Introduction: containing the art of singing. Digested in foure bookes. Not onely profitable, bvt also necessary for all that are studious of musicke. Also the dimension and pefect vse of the monochord, according to Guido Aretinus. By Iohn Dovland... L., T. Adams, 1609 ⌜90 p.⌝

Portions of Dowland's tr have been reprinted as follows: Ch 6 of the Micrologus in "The recognition of chordal formation by early music theorists," by Helen E. Bush in MQ 32, 1946, p. 227-43. Other xrpts reprinted by Hawkins:308-14.

OTTERSTROM, THORVALD [Beiträge zur Theorie] Contributions to theory... Berlin, Sulzbach, 1930. 93p. (Issued in Ger and Engl)

PAUL, OSCAR [Lehrbuch der Harmonik. 1880] A manual of harmony for use in music-schools and seminaries and for self-instruction. Tr from the latest Ger ed by Th. Baker. N.Y., G. Schirmer, 1885. x, 174p.

PENNA, LORENZO [Li primi albori musicali per il principianti della musica figurata. 1672] extensive sum, long tr with ann and exx in Arnold:133-54.

PRAETORIUS, MICHAEL [Syntagma musicum. 1618-20] Vol. 2: De organographia, 1st and 2d parts, in an Engl tr by Harold Blumenfeld. [n. p., 1949] vi, a-x, 83p.

___ ____long xrpts from De Organographia tr in "Pitch in the 16th and early 17th centuries, Part II" by Arthur Mendel in MQ 34, 1948, p. 199-221.

___ ____Vol. III, Ch VI: De Basso generali seu continuo. Sum, long tr and ann in Arnold:93-100.

PRÉVOST, HIPPOLYTE [Musikalische Stenographie ... 1833] A system of musical stenography; whereby the auditor is enabled to note down any vocal and instrumental composition as rapidly and correctly as it is performed. Tr from the Ger by R. Lincoln Cocks. L., R. Cocks, 1849.

PTOLEMY [Harmonicorum] p of Lib. II tr in Stiles' "Explanation of the modes or tones in the ancient Greek music," in Philosophical Transactions, 51, 1760, pt. II, p. 695-773. (Reprinted separately, 1761)

See also item below under WALLIS

QUANTZ, JOHANN JOACHIM [Versuch einer Anweisung die Flöte traversiere zu spielen. 1752. [publ in facs ed by Bärenreiter, 1953] Easy and fundamental instructions whereby either vocal or instrumental performers unacquainted with composition, may from the mere knowledge of the most common intervals in music, learn how to introduce extempore embellishments; as also ornamental cadences, with propriety, taste, and regularity. ... L., Longman and Broderip [n. d., 1790] 32p.

According to Reese, an Engl tr with some omissions of only ch 13-15 of the original, plus tab 13-21.

___ ____xrpts tr in Strunk:577-98.

___ ____brief xrpts from Haupstück XVII in Arnold:407-14, et passim.

___ ____xrpts (on performance practice) from Ch XI in "A problem of rhythm in Baroque music" by Sol Babitz in MQ 38, 1952, p. 533-65.

RAMEAU, JEAN PHILIPPE [Génération harmonique. 1737] sum with lengthy tr in Shirlaw:155-254.

___ [Nouveau système de musique théorique. 1726] sum with some tr in Shirlaw: 134-54.

___ [Nouvelles réflexions sur le démonstration du principe de l'harmonie. 1752] sum with brief tr in Shirlaw:261-74.

___ [Traité de l'harmonie. 1722] A treatise of music, containing the principles of composition. L., J. French [1737] 3, 180p. (Liv. III only)

___ ___(another) L., R. Brown, sold by J. Walsh, 1752. 4, 176p. (Liv. III of the orig only)

___ ___(another) A treatise of music. Tr into Engl. 2d ed. L., Murray, 1779. (Appears as item 383 in Otto Haas' antiquarian catalog no. 4, c.1937, under the name "Rameau, J. Fr." No author by this name appears in any of the standard music reference tools. At the same time, none of the reliable bibliographical tools note an ed of Jean Philippe's treatise dated 1779. This may well be a "ghost.")

___ ___(another) A treatise on harmony, in which the principles of accompaniment are fully explained and illustrated. Tr by G. Jones. L., Longman & Broderip [1795?] (Liv. IV of the orig. Reese cites date [1804?])

___ ___preface and ch 18, 19 and 20 tr in Strunk:564-74.

___ ___sum and extensive tr in Shirlaw:63-133.

RAMOS DE PAREJA, BARTOLOMÉ [Musica practica. 1482. [publ in facs ed by J. Wolf in 1901] xrpts tr in Strunk:201-04.

REGER, MAX [Beiträge zur Modulationslehre. 1930] Supplement to the theory of modulation, tr by John Bernhoff. Leipzig, Kahnt, 1904. 50p. (Reprinted by Kalmus in 1948 as: On the theory of modulation.)

REICHA, ANTON [Cours de composition musicale. 1816] A course of musical composition ... (with remarks by C. Czerny), tr by A. Merrick and ed by J. Bishop. L. [1854] 355p.

___[?] A new theory of the resolution of discords, tr by J. A. Hamilton. L., R. Cocks [c. 1810] 5p. (EiT cites; not otherwise verified.)

___ [Traité de haut composition musicale. [1824-26] Practical harmony and orchestration, tr by C. Rudolphus. L. [s.d.] (This too cited only by EiT and otherwise not verified.)

___ [Traité de mélodie, abstraction faite des ses rapports avec l'harmonie. 1814] Treatise on melody. Considered apart from its relations to harmony. Tr from the Italian by E. S. Metcalf. Chicago, Metcalf [c1893] 138[26]p.

RITTER, ERNST FRIEDRICH EDUARD [Lehrbuch des einfachen und doppelten Contrapunkts. 1872] Treatise on counterpoint, tr by Franklin Taylor. Rev ed. L., J. B. Cramer [1874] 150p.

___ ____(same) tr from the 2d Ger ed, with an additional appendix. B., Ditson, c1878. iv, 163p.

___ [Lehrbuch der Fuge. 1859] A treatise on canon and fugue, tr and adapted by Franklin Taylor. L., J. B. Cramer, 1878. vii, 159p.

___ ____(another) A treatise on fugue, incl the study of imitation and canon. Tr from the 3d Ger ed by A. W. Foote. B. and N.Y., Ditson, c1878. 187p.

___ [Lehrbuch der Harmonie. 1853-] Manual of harmony. Ed by Alfred Richter, tr from the 25th Ger ed by Th. Baker. N.Y., G. Schirmer; B., Boston Music, 1912. vii, 236p.

___ ____(another) Manual of harmony ... rev and ed from the latest ed by Oscar Coon. Newly rev ed N.Y., C. Fischer, 1896. viii, 236p. A "Key to exercises" and "Book of additional exercises" added, c1904.

___ ____(another) Manual of harmony. Tr from the 8th Ger ed by J.C.D. Parker. Boston and N.Y., Ditson, c1873. viii, 215p.
Reprinted(?) 1901, same collation.

___ ____(another) Treatise on harmony, tr and adapted by Franklin Taylor. L., J. B. Cramer ⌈1864⌉ iv, 120p.
Second ed publ 1887 as "New ed, rev and augm," 136p.

___ ____(another) Manual of harmony, tr from the latest Ger ed by J.P. Morgan. N.Y., G. Schirmer, 1864.
This went through various revised editions through the 23rd, 1908. It was republished in L., 1880 and in Leipzig, 1884 and 1887. Various ed also included "Additional exercises."

RIEMANN, HUGO [Geschichte der Musiktheorie. 1898] History of music theory; introduction and chapter XI (i.e., Contrapuntal theory of the 14th and 15th centuries). Engl tr by John F. Spratt in "Studies in Music History and Theory" ed by Lee Rigsby. Florida State Univ. Studies no. 18. Tallahassee, 1955, p. 41-128.

___ [Lehrbuch des einfachen, doppelten und imitierenden Kontrapunkts. 1888] Textbook of simple, and double counterpoint including imitation or canon. Tr by S. H. Lovewell. Leipzig, Breitkopf & Härtel, 1904. viii, 208p.

___ [Musikinstrumente (Kleine Instrumentationslehre) 1888] Catechism of musical instruments (guide to instrumentation). L., Augener ⌈1888⌉ iv, 104p.
Riemann (Musiklexikon) says 9th Engl ed, 1928.

___ [Die Natur der Harmonik. 1882] The nature of harmony, tr by John C. Fillmore. Phila., Presser, 1886.

___ ___ [Orchestrierung. 1902] Catechism of orchestration. Tr from the Ger. L., Augener, 1905.

___ [Partiturspiel. 1903] Introduction to playing from score. New ed. L., Augener ⌜1905⌝ 120p.
4th Engl ed.

___ [Vereinfachte Harmonielehre. 1893] Harmony simplified, or the theory of the tonal functions of chords, tr by the Rev. H. Bewerunge. L., Augener, 1895. vi, 200p.

RIMSKY-KORSAKOV, NICOLAI. Practical manual of harmony, tr from the 12th Russian ed by Joseph Acron. N.Y., C. Fischer, 1930. viii, 142p.

___ Principles of orchestration, tr by Edward Agate and ed by M. Steinberg. N.Y., Kalmus ⌜1930⌝ xii, 152p.

___ ___ (same) digest, selected and ed by Adolf Schmid from the Engl tr of Edward Agate. Pt. 1-2. N.Y., Boosey & Hawkes ⌜1950⌝ 68p.

RIVA, GIUSEPPE [Avviso ai compositori] Advice to the composers and performers of vocal musick. Tr from the Italian. L., Tho. Edlin, 1727. 16p. NB: Mizler von Kolof in the Appendix to his Musikalischer Staarstecher provides a Ger tr of the It orig.

ROUSSEAU, JEAN JACQUES [Dictionnaire de musique. 1768] A complete dictionary of music, consisting of a copious explanation of all words necessary to a true knowledge and understanding of music, tr by W. Waring. L., 1771. 2d ed publ by Murray in L., 1779. Could this be the "ghost" mentioned under Rameau above?

RUFER, JOSEF [Die Komposition mit zwölf Tönen] Composition with twelve notes related only to one another, tr by H. Searle. L., Rockcliff; N.Y., Macmillan, 1954. 218p.

SABBATINI, GALEAZZO [Regola facile e breve per sonare sopra il Basso continuo. 1628] Extensive sum, long tr with ann in Arnold: 110-26.

SAINT-LAMBERT, MICHEL DE [Nouveau traité de l'accompagnement. 1707] extensive sum, long tr with ann and exx in Arnold:172-202 et passim.

SALINAS, FRANCESCO [De musica libri septem. 1577] sum in toto with some tr in Hawkins:404-17. Specific tr: Lib. I xrpts, Hawkins: 404-7; Lib. II, cap x, 408-9; cap xix, 409-10; cap xx, 29; Lib. III, cap i-ii, 411-13; Lib. IV, cap iii, 51-52; cap xxx, 416-17. Xrpts on p. 29, 51-2 refer to temperament.

___ ___ xrpts on temperament from Lib. III, cap xv in Helmholtz Sensations of Tone, 6th Engl ed, p. 547.

SCHENKER, HEINRICH [Neue musikalische Theorien und Phantasien. 1. Bd.: Harmonielehre. 1906] Harmony, ed and ann by Oswald Jonas; tr by E. M. Borgese. ⌜Chicago⌝ Univ of Chicago Pr 1954 xxxii, 359p. (Abridged)

___ ___2. Bd.: Kontrapunkt, Tl. 1 1910] tr into Engl by J. Petrie Dunn, according to Grove's Dictionary, 3rd ed, suppl vol ed by Colles, 1940, p. 567. Unable to locate or verify.

SCHLICK, ARNOLT [Spiegel der Orgelmacher und Organisten. 1511] xrpts tr in "Pitch in the 16th and early 17th centuries, part I" by Arthur Mendel in MQ 34, 1948, p. 33-40.

SCHNEIDER, JOHANN CHRISTIAN FRIEDRICH [Elementarbuch der Harmonie und Tonsetzkunst. 1820] The elements of musical harmony and composition, tr by the author of the musical reviews in Ackermann's "Repository of Acts." L., 1828.

___ ___(another) Treatise on thorough bass and harmony, tr by Edward L. White. L., 1856.
Published by Ditson, B., c1851. 28p.

SCHOENBERG, ARNOLD [Harmonielehre. 1911] Theory of harmony, tr by Robert D.W. Adams. N.Y., Philosophical Lib ⌜1948⌝ xviii, 336p. ("Considerably abridged from the original.")

SCHROETER, CHRISTOPH GOTTLIEB [Deutliche Anweisung zum General-Bass. 1772] sum, extensive tr, ann and exx in Arnold: 294-308 et passim.

SMITS VAN WAESBERGHE, JOSEPH [Melodieleer] A textbook of melody; a course in functional melodic analysis. Tr from the Dutch by W.A.G. Doyle-Davidson. ⌜Nijmegen?⌝ American Institute of Musicology, 1955. 107p.

SORGE, GEORG ANDREAS [Vorgemach der musikalischen Kompositionen. 1745-7] short sum with very brief tr in Shirlaw: 302-8.

SPATARO, GIOVANNI. Two letters preserved in Vat. Lat. 5318 and Paris MS Italien 1110, the first to Cavazzoni, the second to Aron, both dealing with Willaert's chromatic duo "Quid non ebrietas," and in passing, temperament, instruments, and harmony, are tr as part of E. Lowinsky's article "Adrian Willaert's chromatic duo reexamined" in the Tijdschrift voor Muziekwetenschap, 18, 1956, p. 1-36; letters on p. 14-18, 22-26.

STADEN, JOHANN [Kurzer und einfältiger Bericht für diejenigen, so im Basso ad Organum unerfahren. 1626 ⌜reprinted in Allg. Mus. Ztg., 12, 1877⌝] sum with long tr and ann in Arnold: 100-109.

TARTINI, GIUSEPPE [Lettera del defonto Signor Tartini alla Signora M. Lombardini...] A letter from the late Signor Tartini ... publ

as an important lesson to performers on the violin. Tr by Dr. Burney. L., H. Bremner, 1771.
[2d ed.] London, 1779.

___ [Trattato di musica. 1754] Principles and power of harmony [by Benjamin Stillingfleet] L., Printed by J. and H. Hughs and sold by S. Baker and G. Leigh, 1771. vii, 154[6]p.
Essentially a tr of the Trattato with extensive commentary.

___ ___ sum and short tr in Shirlaw: 286-302.

___ A Treatise on the ornaments of music, tr and ed by Sol Babitz. In Journal of Research in Music Education, IV, 1956, p. 75-102, with exx.
Original MS apparently lost; Babitz's tr is from P. Denis' Fr tr, Traité des agrements de la musique (1782).

TCHAIKOWSKY, PETER ILYITCH. Guide to the practical study of harmony, tr by E. Krall and J. Liebling. Leipzig, Jurgenson, 1900. 137p.

TELEMANN, GEORG PHILIPP [Singe-, Spiel- und Generalbass-Übungen. 1733-35] p sum, brief tr and exx in Arnold:283-90, et passim.

TELEMANN, GEORG MICHAEL [Unterricht im Generalbass-Spielen auf der Orgel oder sonst einem Clavier-Instrumente. 1773] sum, tr, ann and tab in Arnold:308-311.

TINCTORIS, JOANNES [Liber de arte contrapuncti. 1477. CS IV, 76-153] p tr and ann in Riemann/Spratt:115-23.

___ ___ Dedication tr in Strunk:197-99.

___ [Proportionale musices. c. 1476. from the Brussels. Bibl. Royale Ms. II 4147] tr by Albert Seay in JoMT, I, 1957, p. 26-47. exx, p. 48-76.

___ ___ from CS IV, 153^{b}-155^{a}] the Dedication tr in Strunk:193-96.

___ [Terminorvm mvsicae diffinitorivm. c. 1495] tr in James A. Hamilton's Celebrated dictionary, L. [1849] p. 160ff.

TOSI, PIER FRANCESCO [Opinioni de' cantori antichi e moderni, o sieno osservazioni sopra il canto figurato. 1723] Observations on the florid song; or, sentiments on the ancient and modern singers. Tr into Engl by Mr. Galliard. L., J. Wilcox, 1742. xviii, 184p.
Second edition with the addition of explanatory ann and exx in musick, L., Wilcox, 1743. (BrusF cites date 1745.)
Brief portions of the work are also tr in Dannreuther's Ornamentation, p. 123-28.

TÜRK, DANIEL GOTTLIEB [Clavier-Schule. 1789] Treatise on the

art of teaching and practising the piano forte ... with explanatory exx, tr from the Ger and abridged by C. G. Naumberger. L., Printed for the proprietor by Preston [1804] 40p.

___ ___Tl. I, The Clavier-school, tr by Dr. Callcott in 1803. Br. Mus. MS Add. 27686, ff23, 40. ("Followed by a précis of the same and other portions of the work.")

___ [Kurze Anweisung zum Generalbasspielen. 1791] xrpts sum, tr, with tab in Arnold:318-22, et passim.

VIADANA, LODOVICO [Cento concerti ecclesiastici. 1602] the Preface and the 12 rules for basso continuo are tr and ann in Arnold:3-20, et passim.

VICENTINO, NICOLA [L'Antica musica ridotta alla moderna prattica. 1555] xrpts tr in Hawkins as follows: Lib. I, cap iv, Hawkins:41-44; Lib. III xrpts, ibid.; unlocated xrpts, Hawkins:219-20; Lib. IV, cap xxxxiii, Hawkins:392-93.

VIERLING, JOHANN GOTTFRIED [Versuch einer Anleitung zum Präludieren. 1794] an Engl tr by James A. Hamilton is mentioned by Riemann in his Musiklexikon in article on Hamilton. Not located or verified by other sources.

VOSSIUS, ISAAC [De poematum cantu et viribus rythmis. 1673] brief xrpts in Hawkins:71-2 (on hydraulic organ); 660-61, with sum 659-61 on general theory.

WALLIS, JOHN [Claudii Ptolemaei Harmonicorum libri tres. 1682.] an important p, p. 314f of the Appendix: De veterum harmonia ad hodiernam comparata (p. 281-328) dealing with the modes is tr in Hawkins:54-55.

WEBER, GOTTFRIED [Versuch einer geordneten Theorie der Tonsetzkunst. 1817-21] Attempt at a systematically arranged theory of musical composition, tr by J. F. Warner. B., Wilkins and Carter, 1841-46.

___ ___(same) General music teacher: adapted to self-instruction ... Tr from the 3d Ger ed [1830-32] with notes and additions by J. F. Warner. B., Wilkins and Carter, 1841. viii, 135p. (Forms an introduction to the "Attempt at a ... etc.")

___ ___(another) The theory of musical composition, treated with a view to a naturally consecutive arrangement of topics. Tr from the 3d, enl and improved Ger ed, with notes by J. F. Warner. Ed, with additions drawn from the Ger orig by John Bishop. L., R. Cocks, 1851. 2v.

WEITZMANN, KARL FRIEDRICH. Bowman's-Weitzman's (sic) manual of musical theory. Prepared and ed with the approval and permis-

sion of the author, C. F. Weitzman (sic) by his pupil, E.M. Bowman. N.Y., W.A. Pond⌜1877⌝287p.
A later ed (or reprint?) was tr into Ger!

WERCKMEISTER, ANDREAS [Die nothwendigsten Anmerckungen und Regeln wie die Bassus continuus oder General-Bass wohl kõnne tractiret werden. ⌜n.d., reprint, 1715⌝] extensive sum, tr of xrpts, ann and exx in Arnold:202-213, et passim.

WIDOR, CHARLES MARIE. The technique of the modern orchestra; a manual of practical instrumentation, tr by E. Suddard. L., Williams; N.Y., Schuberth, c1905. xi, 200p.
Rev ed with an appendix by Gordon Jacob, 1946.

WYLDE, JOHN [Musicam Guidonis ⌜from the MS of Waltham Holy Cross⌝] xrpts tr in Hawkins:240-44.

ZARLINO, GIOSEFFO [Istitutioni harmoniche. 1558] Book III tr, indexed, ann with a commentary in G.A. Marco's "Zarlino on counterpoint," an unpubl Ph.D. diss, U. of Chicago, 1956.

___ ___xrpts from Books III and IV tr in Strunk:229-61.

___ ___xrpts tr and lengthy sum in Shirlaw:29-57.

ZIEHN, BERNHARD. Canonical studies: a new technic in composition. Milwaukee, W. A. Kaun Co., 1912. 210p.
Not precisely a tr; publ in both Ger and Engl.

___ [Harmonie- und Modulationslehre. 1888. 2d ed, 1909] Manual of harmony: theoretical and practical. Vol. I. Leipzig, Fleischer, 1907.

ZUCKERKANDL, VICTOR. Sound and symbol: music and the external world, tr by W. R. Trask. N.Y., Pantheon ⌜c1956⌝vii, 399p.

Glossary of general abbreviations used

	means		means
add	additional additions	incl	including inclusive
ann	annotated annotations	intro	introduction
		It	Italian
arr	arranged	L.	London
attr	attributed	N.Y.	New York City
augm	augmented	numb	numbered
B.	Boston	orig	original
ch	chapter(s)	p	partial portions
comp	compiled		
diss	dissertation	p.	page(s)
ed	edited edition	publ	published publisher
Engl	English	rev	revised
enl	enlarged	sum	summaries summarized
exx	examples		
facs	facsimile	tr	translated translation
Fr	French		
Ger	German	xrpts	excerpts

THE ISAGOGE IN MUSICEN OF HENRY GLAREAN

by

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The history of music theory in the first half of the 16th century is dominated by the figure of Henry Glarean.[1] Glarean, whose full Latinized name is Henricus Loritis Glareanus,[2] is known to musical scholarship as the author of the Dodecachordon, or Book of the Twelve Modes.[3] In the history of general culture, he is conceded to be the greatest of the Swiss humanists.[4] He was "Dichter, Philolog, Geograph, Mathematiker und Musiker." Although his studies ranged over the full field of renaissance scholarship, his work was conditioned throughout by three great devotions: his ardent pursuit of classical letters, his attachment to Switzerland and her free institutions, and his profound love of music.[5] Glarean was first and foremost a teacher, and most of his writings are pedagogical. Among these are a number of editions of Latin authors, including the De musica of Boethius, a guide to Switzerland which introduced the reader to her laws, peoples

1. Born in Mollis, Switzerland, in the canton of Glarus in 1488. Died in Freiburg im Breisgau in 1563. For a full account of Glarean's life and works, see H. Schreiber, Heinrich Glarean, seine Freunden und seine Zeit, (Freiburg: Universitaets-Buchdruckeri, 1837); O. F. Fritzsche, Glarean, sein Leben und seine Schriften, (Frauenfeld, 1890); Ludwig Geiger, article "Glarean," Allgemeine Deutsche Biographie, (1882, Vol. IX, pp. 210-213).

2. Following the practice of literary men of his time, Glarean took the name of his canton as a surname.

3. Dodecachordon, (Basel, 1547), 470 pages. Contents: definitions; the Greek musical system; the Guidonian scalar system; intervals, notation, rhythm and metre; the Pythagorean tuning system; the history of the modes and their practice; the current modulative devices; also a large number of musical examples, illustrating the stylistic devices of the period. These are accompanied by highly valuable analyses. German translation with transcriptions of music, P. Bohn, Gesellschaft für Musikforschung, Vol. 12. English translation with biographical introduction and transcriptions, Clement Albin Miller, (doc. diss., University of Michigan, 1950). On the modal system of Glarean, see Gustave Reese, Music in the Renaissance, (New York: W.W. Norton, 1954) pp. 185-6; Hugo Riemann, Geschichte der Musiktheorie, (Leipzig: Max Hesse's Verlag, 1898); Grove, Dictionary of Music and Musicians, article, "Glarean."

4. See, for example, The Renaissance, the Protestant Revolution and the Catholic Reformation in Continental Europe, by Edward Maslin Hulme, (New York: Appleton-Century, 1915) p. 277.

5. Geiger, loc. cit.

and customs as well as to her lakes and mountains, and a geography text which was very possibly the first to mention America by name.[6]

For the musician at least, the most significant of Glarean's many works is the Dodecachordon, published in 1547. This great treatise, appearing at the moment when polyphony was passing into the orbit of tonality, has stood for over four hundred years as a landmark in the history of music theory. It is not only a searching analysis of the modal practices of the time, but is an outstanding study of the development of the musical system of the western world. The reputation of this book, written when the author was at the peak of his powers, has overshadowed a small but valuable early work, the Isagoge in Musicen, published in 1516.[7] In many respects the Isagoge, written when Glarean was at the beginning of his career, stands to the Dodecachordon as a preparatory sketch to a finished mural. The musical materials are the same, and more than one passage from the smaller work appears word for word in the larger. Nevertheless, the presentation is different, and the Isagoge has certain vivid qualities of its own. It is, to quote its author, "fresh in thought rather than exhaustive in treatment."

The Dodecachordon was addressed to musicians and scholars, and Glarean spared neither words nor pains to establish his points. The Isagoge, as its author constantly reminds both himself and the reader, was designed for beginners. It was, in fact, a classroom text, written for his own private students at their express request. It is not, for all that, a pastiche. Though it deals with traditional materials, the treatment is individual. Glarean indicates sources but he does not "lift" passages. Under his lively pen, the old metals are reminted. At the beginning, the teacher resolutely sets himself the task of grounding his boys in the usual musical precepts of the day. For the most part, he sticks to his job, but now and then his feelings get the better of him, and he bursts out with some characteristic diatribe against pedagogical charlatans and pretentious scholars. These passages may mar the contours of his little book, but they certainly add to its color. Glarean's hates are as illuminating as his loves, and the Isagoge gives us a glimpse of both.

In accordance with prevalent practice, Glarean wrote in Latin.[8] He knew the language thoroughly, using it daily in conversation with his friends and pupils, and in his correspondence with other scholars.

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6. For a list and description of the writings of Glarean, see Fritzsche, op. cit. pp. 83ff. A copy of the Geographia is in the Huntington Library, San Marino, California.

7. Isagoge in Musicen (Introduction to Music), (Basel: Froben, 1516). Thirty-eight 12 mo. pages. Copy in Library of University of Southern California.

8. A few of Glarean's contemporaries preferred the vernacular. Pietro Aron and Zarlino, although good classicists, used Italian "to save time for themselves and the reader." Virdung and Schlick wrote in German. Humanists like Erasmus and Glarean, who came from small countries, naturally used Latin, which was the usual medium of communication among scholars till well into the 18th century.

Like his "Father and Teacher" Erasmus of Rotterdam, he believed that the vocabulary should be expanded to express new ideas. His syntax and style, however, remain classical. Literary allusions and adroit plays on words appear, but Latin was part of his life, and they flow naturally from his pen.

Like his knowledge of Latin, Glarean's understanding of music came from daily use. He was grounded in the elements of theory in childhood. He sang and played the cithara.[9] At the University of Cologne, he studied under Cochlaeus, professor of music and mathematics, who was at that time writing his own little text-book, the Musica.[10] In later life it was Glarean's great joy to invite friends to his home to sing polyphonic compositions. Music was far more than a subject to be studied as part of the quadrivium, although he believed in that approach, too. It was part of the air he breathed. As a writer on music, then, Glarean occupies a middle ground between the great theorists who were also eminent in their own day as performers and composers — for instance, Tinctoris and Zarlino — and those who talked about music without knowing the art itself. Of these last, Glarean made short work.

The ten compact chapters of the Isagoge cover a surprising amount of material. Although the presentation is simple, the subject matter itself involves some of the most intricate and abstruse problems in musical theory. These, naturally enough, cannot be dealt with in the present introduction, which is neither a critical analysis nor a definitive appraisal. The object here is to call the attention of the reader to the work itself, and to indicate certain salient points which may arouse the desire for future study.

Chapter I opens with representative definitions of music, with the author's own emphasis on the Pythagorean viewpoint as enunciated by Boethius. The remainder of the chapter is devoted to the elements of acoustics, which constituted the backbone of theoretical instruction from the 6th century B. C. to the 17th century A. D. Glarean brings all this down to his own time and place, however, and lays out a plan of instruction for his boys. They should learn the sol-fa system, they should study Greek in order to read the old theorists, they should know their mathematics and they should play the cithara! Glarean laid great emphasis on the Greek contribution to music. His use of the old Greek terminology for the scale degrees however, was not the affectation of an over-zealous humanist, but the common practice of his period. The Greek names appeared cheek by jowl with the Guidonian syllables in

9. The "cithara" which Glarean played was presumably the instrument represented in the Dodecachordon, p. 58, a harp of twenty-four strings which closely resembles the "Gothic harp" depicted on p. 265 of Curt Sachs' The History of Musical Instruments, (Norton, 1940).

10. Cochlaeus, Johannes Noricus. (1480-1552). His Musica was published by Wendelstein in 1507. His second theory book, the Tetrachordum Musices, printed in 1511, went through five editions. For references to his association with Glarean, see Fritzsche, op. cit. p. 3 and p. 5; Schreiber, op. cit. p. 4.

syllables in ordinary music hand-books until the 17th century.[11]

The reader's attention is particularly drawn to the Introductorium, or diagram, with which the chapter ends. This diagram, taken from the Musices of Glarean's older contemporary, Gafurius,[12] serves as a summary of the contents of the chapter. It also gives the early history of scalar theory in a nut-shell. Presented in collateral arrangement are:

1) The Greek scale organized in tetrachords, with the Greek functional names.
2) The scale in terms of Pythagorean string-lengths.
3) The Odonic letter notation.
4) The diatonic sequence of tones and semitones, a device reminiscent of the period between the Musica Enchiriadis and Guido.[13]
5) The Guidonian mutation syllables.

Glarean used this same diagram in the Dodecachordon, with one significant addition -- the modal finals according to the Gregorian tradition.

Chapters II and III discuss the Pythagorean scale and the Guidonian syllables respectively. The sources are Guido d'Arezzo and Boethius. The question of musica ficta — a "hot" one in his day — Glarean passes over quickly, as if anxious to avoid raising any issues. (After all, he is writing a primer!) On the application of the mutation, his attitude is prudent, not to say timid. He scarcely carries the mutation principle beyond the concept of the 12th century. Not for a moment would he have admitted the liberties advocated by his contemporary, Pietro Aron, or by the older and even more radical Hothby.[14]

In Chapter IV, which deals with the intervals and consonances, Glarean relies on Boethius and Gafurius. Chapters V and VI are given over to the theory of scale construction and problems of tuning. All these materials are taken from the De musica of Boethius, and do not advance beyond it.[15]

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11. See, for example, Morley's Plaine and Easie Introduction to Practicall Musicke (1547), which is, largely because of its highly impractical terminology, neither "plaine" nor "easie."

12. See Gustave Reese, Music in the Renaissance, (W. W. Norton, 1954) pp. 178-9. See also, Irwin Young, Franchinus Gafurius: his works and life, (doc. diss., University of Southern California, 1955).

13. See Gustave Reese, Music in the Middle Ages, (W. W. Norton, 1940), p. 137.

14. See Reese, op. cit. p. 382. The subject of mutation and musica ficta is taken up in detail in the study, Modulation: an outline of its prehistory from Aristoxenus to Henry Glarean, Chap. V, pp. 416-538, by Frances Berry Turrell, (doc. diss. University of Southern California, 1956. To be available on microcards, Rochester University Press).

15. See Boethius, De institutione musica, (edition O. Friedlein, Leipzig, 1867. The Friedlein edition is used throughout this study). Book V, p. 349f for the background for the entire discussion.

The four concluding chapters are of signal interest to all students of modal theory. Chapters VII and VIII deal with the Greek modes as transmitted by Boethius, and Chapters IX and X take up the church modes. Glarean's table of examples conforms to the practices with which he was personally familiar, but he also shows an awareness of the long, slow process of scalar evolution which came before. These four chapters should be carefully studied in connection with the views of other theorists. They should also be compared in detail with Glarean's own mature conclusions as they are set forth in the corresponding chapters of the Dodecachordon.[16] Suffice it here to say that in the Isagoge the author uncovered difficulties which he did not solve. This is not surprising, since these difficulties included the ever-annoying question of modal terminology, and the far deeper problem of the relationship between modality and tonality. It is regrettable, however, that Glarean's interpretation only added to the confusion.

Chapter VII takes as its point of departure the famous passage from the De musica of Boethius which treats of "the consonances of the octave which are also called modes, tropes, tones or constitutions [modi, tropi, toni, constitutiones]."[17] Innocent enough on the surface, this particular chapter has been a stumbling block ever since it was written. Glarean's commentary shows that he too failed to grasp its real significance. For this, the responsibility may be divided between Glarean and Boethius himself. Each man was too close to the conceptions and preconceptions of his own age. An analysis of the source-passage in the De musica shows that Boethius knew perfectly well what he wanted to say. He is certainly not "the man who mixed up the modes."[18] The text is not garbled, and taken sentence by sentence, the statements read clearly enough. However, the order of their presentation is not too satisfactory, and the style is far too compact for comfort. The whole passage gives an impression of haste, as if the author were pressed for both time and space. Moreover, Boethius assumes on the part of his readers a considerable degree of familiarity with the tunings and transposition scales of Late Antiquity, specifically those of Claudius Ptolemy.[19] This background later readers did not have. The worst feature is the ambiguity in the matter of terminology: the words modi, tropi, toni and constitutiones are used as interchange-

16. Dodecachordon, Book I, Chapters XI-XV; Book II, Chapters I-VII.

17. Boethius, De musica, Book IV, Chapter V, (Friedlein, p. 341). Glarean calls this Chapter IV in the original text. This is not a mistake; Friedlein counted the proemium as a chapter and Glarean did not.

18. Boethius is a strong contender for the title "most misquoted man in musical history." He has suffered a second martyrdom at the hands of his commentators, favorable and unfavorable, medieval and modern. The particular passage under discussion may be examined in O. Paul's German translation, Boetius: Fünf Bücher über die Musik, (Leipzig, 1872) pp. 136-146. English translation in The de Musica of Boethius: its place in the history of music theory, by Frances Berry Turrell, University of Southern California Press, 1958.

19. See J. Murray Barbour, Tuning and Temperament, Chapter I.

able synonyms, and are applied indiscriminately to octave species distinguished by their pattern of steps and half steps (modes in the conventional sense), and transposition scales differing only in pitch (in reality, keys). It is undoubtedly true, as Boethius says, that such indiscriminate use of terminology was current in his day. It is also true that his own failure to establish a verbal distinction between octave species and transposition scale has been the cause of many a sad misunderstanding.[20]

The musical situation described by Boethius is essentially this:

1) There is one ground-scale, the double octave from A to aa (as in the natural minor scale of the present day).
2) This basic scale contains seven octave species, each starting on a different note, and each having its individual pattern of steps and half-steps (the seven "modes" in the ordinary sense).
3) This entire ground-scale, including the seven constituent octave species may be transposed to any convenient pitch.
4) Seven transpositions or "tunings" in current use (the seven keys of Claudius Ptolemy) brought all seven octave species within the range of the cithara.

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20. See Reese, Music in the Middle Ages, p. 135, including note 17; pp. 153-4, including note 19. For detailed discussion of errors in use of terms, see Auda, Les Modes et les Tons de la Musique, pp. 11ff. Aristoxenus recognized the problem in the 4th century B. C. "The account of the keys given by the Harmonists closely resembles the observance of the days, according to which, for example, the tenth day of the month at Corinth is the fifth at Athens and the eighth somewhere else!" Glarean concluded some nineteen centuries later that the entire difficulty lay with the nomenclature, and not in the nature of the modes themselves. (Dodecachordon, Book II, Chapter VII, pp. 78-9; Miller, p. 193). Needless to say, the problem was hydra-headed. Here are a few of the "heads":

a) The old words modus and tonus originally simply meant measurement and tension or tuning respectively. They were, however, made to do general duty for various scalar developments, specific in nature, which should have been more closely defined. The synonyms tropus and constitutio were also abstract and broad in meaning. To equate them all, as Boethius did, was not inaccurate linguistically, but it was altogether inadequate musically.

b) When these same terms were carried from Greek into Latin, and on into the treatises of Late Antiquity, they were used to describe a musical situation which had materially changed. The terminology was never adjusted to the actual musical facts.

c) In addition to the basic confusion in the use of the generic terms, a crowd of contradictions accumulated with regard to specific names for all the octave species and transposition scales. (Cf. Aristoxenus, as quoted above). It would of course be better to forget all the names, and deal only with the musical phenomena as such, but the student must push through the thickets of dead verbiage to get at the musical truths involved. For this, there is no known remedy.

5) The names of these transposition scales are:

Hypodorius — (untransposed ground-scale, A-aa, Aeolian mode).

Hypophrygius — (ground-scale raised by a whole tone, compass B-bb, with C-sharp and F-sharp).

Hypolydius — (ground-scale raised two whole tones, compass C-sharp -- cc-sharp, with C-sharp, D-sharp, F-sharp and G-sharp).

Dorius — (ground-scale raised two whole-tones and a half, compass D-dd with B-flat. This is the Dorian mode of the early Middle Ages, in reality the ground-scale transposed up a perfect fourth).

Phrygius — (ground-scale raised a perfect fifth, compass E-ee with F-sharp).

Lydius — (ground-scale raised another whole-step, compass F-sharp -- ff-sharp, with F-sharp, G-sharp and C-sharp).

Mixolydius — (ground-scale raised another half-step, compass G-gg with B-flat and E-flat).

This system is two-dimensional: the first dimension is the ground-scale, with its constituent octave species; the second is the series of transpositions by which the original ground-scale is carried to different pitch levels. This duality Glarean glimpses faintly if at all. Considering the musical climate in which he lived, this is not surprising. The principle of multiple transposition, well enough understood by certain Greek theorists,[21] was almost entirely lost sight of during the Middle Ages. Its ultimate re-establishment on the harmonic level could scarcely have been foreseen by a young Swiss theorist of the early 16th century, who was steeped in the conservative choral traditions of German Catholicism, and who was, ipso facto, out of touch with the advanced chromatic tendencies of certain contemporary Italian instrumentalists.[22] Even with due allowance, however, Glarean's presentation in the Isagoge is too hasty by far. It is oversimplified even for a primer. He fails to establish for the benefit of his boys the distinction between octave species and transposition scale — if indeed he fully grasped it himself. He presents the modal system in flat surface, as it were, and thus concurs in the canonization of a medieval blunder. Fortunately for his future reputation, he is in no way satisfied with himself, and does not hesitate to admit it.

> Of the octave, therefore, there are seven species or constitutions. If anyone should make them all higher or all lower, he will produce seven modes. The names of these are the Hypodorian, Hypophrygian, Hypolydian, Dorian, Phrygian, Lydian and Mixolydian. But even as I wrote these names, and realized that we are not now entirely agreed as to how the Ancients used them and that many of the things

21. Notably Aristoxenus and Claudius Ptolemy. See Turrell, op. cit. pp. 167-204.

22. For example, Willaert, whose vocal style was conditioned by his experience as an organist.

> that are current in our day not only fail to accord with the ancient practice but are sometimes quite remote from them, it is not easy for me to put into words with what reluctance I have wielded my pen. But there will be perhaps something which I may plead in my own behalf: that which I do not know, I shall frankly state that I do not know — a course of action which the learned are all too loathe to pursue....

After this burst of mingled frustration and candor, Glarean shunts the discussion off into generalities regarding the affectus. He enlivens his remarks with further jibes at contemporary pedants. Being only human, he finds real comfort in the thought that if he himself does not understand the ancient modes, nobody else does either!

He advises scholarly caution, and castigates its opposite:

> It is certain that these are things which existed among the Ancients, but as to just how they adapted these things to stringed instruments, syllables, metric feet and dance measures so that they now irritated and now delighted, I would consider wiser to be left for conjecture... A thing which displeases me [is] the way in which so many have rashly dared to introduce all ancient methods or to equate them with the new, so that there is nothing among the ancients whose counterpart they do not attempt to point out today. ...They must be judged as small brash souls who, since they do not know anything, would fain appear to know everything.

Two points of interest emerge from these concluding passages: 1) the fact that the neo-Hellenic tendencies which culminated in the Florentine Camerata were well under way by 1516; 2) Glarean's own cautiously critical attitude toward them. A useful procedural hint may be derived from his comments: from the scientific point of view, it is dangerous to be dogmatic about Greek music; from the creative point of view, it may be exceedingly fruitful to let one's imagination play over the possibilities.

In Chapters IX and X, Glarean takes up the eight church modes as they were taught in his day. It is at this point that a comparison with the mature views of the Dodecachordon becomes most interesting. In the Isagoge, the author shows no particular dissatisfaction with the four authentic and four plagal modes of Gregorian tradition. One inconsistency, however, strikes his eye. In his tabulation of modal examples, Modes V and VI contain the B^{b}, the alternate forms with B-natural being ignored. This preference for the B^{b} in these two modes was sanctioned by usage, but as Glarean points out, this is not logical. The octave species F-f with B^{b} ("synemmenon") is the same scalar pattern as C-c with B-natural, and C-c with B^{b} is a duplication of the pattern G-g with B-natural. Glarean is aware of this, but he does not put his finger on the cause, which is the unwitting substitution of one octave species for another through transposition. Once again, it is the failure to perceive

the role of transposition that keeps him from a solution. Both here and later, Glarean's horizons were limited by the concept of one-dimensional modality.[23]

The little Isagoge is clearly an immature work. On the basis of its musical conclusions, it is of slight importance. It contains, however, the germs of the author's future development. His insatiable intellectual curiosity, his sense of historical perspective, and his capacity for detailed analysis all manifest themselves here. He is keenly interested in the music of his own times, and his philosophy of musical history is dynamic rather than static. He looks to the composer rather than to the theorist for his final answers. He had real capacity for self-criticism: his dissatisfaction with his own presentation of the modal system served him as the grain of sand serves the oyster. For him, too, the Isagoge functioned as a primer, in which the teacher became his own pupil. "There will be opportunity at another time," he writes in the Dedication, "to put this material on the anvil and turn it out in a more finished form."

This promise was fulfilled in the Dodecachordon, in which the mature scholar laid all his vast learning at the feet of Music. In both books, however, the purpose of the man was the same, "to teach art as art is," and "to help learners rather than to appear learned."[24]

Glarean was no prophet and no originator, nor did he intend to be. His outstanding qualities were candor, clarity, objectivity and the ability to amass and analyze an amazing amount of significant material. He was a man of his times, as he himself was well aware. He once observed, "I consider the times in which one lives to be of the highest import."[25] It is not disparagement of his contribution to music and letters to point out that his representative function is far greater than his individual genius.

Erasmus of Rotterdam has left us more than one appraisal of Glarean's abilities. In March, 1516, at the very moment when the Isagoge was being prepared for the press, Erasmus wrote to Urbanus Regius as follows:

> We have here Henry Glarean, a young man who has been decorated with the Imperial laurel, an honor which among his many distinctions, I look upon as the least. He is extremely skilful in every branch of mathematics; in Aristotelian philosophy ... he may match the very highest professors... In fact, there is no kind of learning in which he

23. This fact is brought out by a comparison of the Dodecachordon with the Istitutioni Harmoniche of Zarlino, publfshed in 1558, only eleven years later.

24. Dodecachordon, Preface, p. 3.

25. "Multum referre puto, in quae tempora quis incidat." Cited by Fritzsche, op. cit. (frontispiece).

> is not happily versed... Glarean is by a peculiar gift of nature patient and fond of literary work. Whatever he does not know, he learns with avidity, what he does know, he teaches willingly and candidly.[26]

Two years later, writing to Glarean himself, Erasmus implies even more:

> And you, my Glarean, must so in every way prepare yourself, that when we shall be ready, as we soon shall be, to pass on the Lamp, you may so take the place of Erasmus as to throw his name entirely in the shade.[27]

The present-day estimate of Glarean is not nearly so high. Nevertheless, one thing is certain, the history of music theory would be quite different without him.

Before passing on to the translation itself, three men associated with the production of the Isagoge should receive their due meed of honor. These three are Peter Falk, the "Petre Falco" of the Dedication, Hans Holbein the Younger, who designed the wood-cut for the frontispiece, and Joannes Froben, the printer and publisher.

Peter Falk, Burgomeister of Freiburg im Breisgau, was well-known in the 16th century as a statesman at home and a diplomat abroad.[28] An ardent lover of letters, as well as a devoted Swiss patriot, he was particularly attracted to the young Glarean because of the latter's Description of Switzerland.[29]

The frontispiece to the Isagoge has an interesting history of its own. It was one of the younger Holbein's first commissions. It is signed "Hans Holb," a form of signature which the artist abandoned soon after. Arthur Chamberlain, in his definitive work, Hans Holbein the Younger, describes the page as follows:

> The earliest work of this nature which Holbein produced was a title-page in the form of a Renaissance arch with a number of small cupids, one blowing a horn, others with spears, two holding the flat cartoon or roll of parchment in the center reserved for the lettering of the title-page, and two others supporting a shield with Froben's trade-mark, the caduceus... This title-page has suffered from inferior cutting, but nevertheless has considerable charm, was first used by Froben in the winter of 1515, and appeared in a number of books issued during the next five years, including

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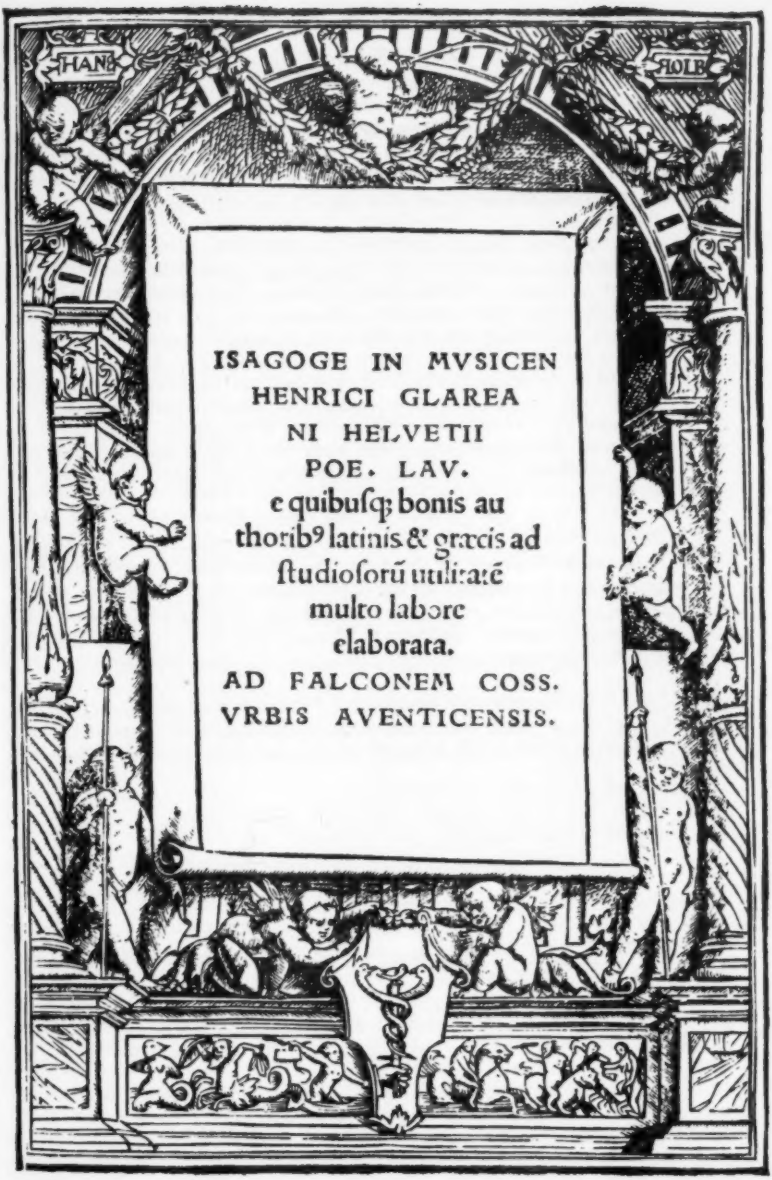
26. Francis Morgan Nichols, The Epistles of Erasmus, (London: Longmans, Green and Co., 1904), p. 246, Vol. II, Epistle 380.

27. Op. cit. Vol. III, p. 462, Epistle 823.

28. See Allgemeine Deutsche Biographie, article "Falk," for further details.

29. Schreiber, p. 26; Fritzsche, p. 16.


ISAGOGE IN MVSICEN
HENRICI GLAREA
NI HELVETII
POE. LAV.
e quibuſq; bonis au
thorib⁹ latinis & græcis ad
ſtudioſorũ utilitatẽ
multo labore
elaborata.
AD FALCONEM COSS.
VRBIS AVENTICENSIS.

More's Utopia, published by Froben in 1518.[30]

Hans Holbein the Younger and his brother, Ambrosius, were like Erasmus, Sir Thomas More and Glarean himself, associated with the great publishing house of Froben in Basel.[31] Its founder was the scholar, craftsman and philanthropist, Joannes Frobenius, the printer of the Isagoge. The contribution of the Frobens to cultural history is well stated by Alfred Woltmann in his study of the life and times of Hans Holbein the Younger:

> The earliest Basel printers...especially Frobenius... combined a pure taste for art with a scientific interest based on solid culture. They stood in connection with the most distinguished scholars, who gave them their works to publish and undertook for them the correction of the newly edited authors. These publishers took care that their work should be beautifully finished, and in this, another art took part, for the books, especially the title-pages, were adorned with wood-cuts. An earnest love for the work itself was far more prominent with them than any striving after material gain, which in Froben's case, was extremely small.[32]

Thanks to the combined skills of printer and artist, the Isagoge in its original form presents an attractive appearance. Its thirty-eight 12mo pages are beautifully printed (see facsimile). The text is well spaced, the punctuation meticulous, the proof-reading immaculate, the errata carefully noted. Holbein's illuminated capitals mark the beginning of each chapter.

The English version presented here is complete and almost literal. To the best of our knowledge, it is the only translation of a delightful little work which deserves to be carefully studied in the original.[33]

30. Hans Holbein the Younger, Arthur B. Chamberlain, (London: G. Allen & Co., Ltd.), Vol. I, p. 44-46; p. 191. The wood-cut was also used for the Epistola ad Dorpium of Erasmus. (See W. Stein, Holbein der Jungere, (Berlin, 1929), pp. 30-31.) For information on Holbein's relations with the Basel humanists, see Hans Reinhardt, Holbein, (Paris: Hyperion Press), pp. 10-11.

31. See Allgemeine Deutsche Biographie, article: "Froben."

32. Alfred Woltmann, Holbein and His Time, (trans. by F. E. Bunnett), (London: Bentley and Sons, 1872), pp. 111-112.

33. Thanks are due to the Library of the University of Southern California for permission to use the photostatic copy made from their original.

Dedication

To Peter Falk, Consul At Freiburg, Switzerland
and patron of letters, Henricus Glareanus
gives greeting.

Since, dear Peter Falk, cherished by me and by our country alike, I have observed that in our day the other liberal disciplines are enthusiastically enkindled throughout the world, I am amazed that music has found no champion, especially since it is the most venerable art of all. It was indeed so esteemed among the ancients that all learning was included under the name of music. He who was unlettered was called amousos, that is to say, unmusical, whereas he who was ignorant of music was considered completely uneducated. Aside from Plato, who considers it to be of such importance to the Republic that he has devoted the most painstaking attention to it, how many illustrious philosophers, both Greek and Latin, have treated the subject of music with the greatest consideration!

I have therefore undertaken, within the limits of my own abilities, the restoration of the art to its pristine splendor, and have compiled from the most eminent authors my Isagoge, or Introduction. It is truly a small book, but composed with no small labor, to the end that by our industry, humble though it may be, we should spur promising youth to the study of the old and true music, and arouse the learned to be the defenders of its just claims.

In this undertaking, indeed, I trust that I shall be as lucid as I am brief. For there will be opportunity at another time to put this same material on the anvil, and turn it out in a more finished form. Meanwhile, it is my pleasure to present to my friend Falk, on his happy return from Syria,[34] this little book, such as it is, fresh in thought rather than exhaustive in treatment. Its composition has been urged upon me by my friends, Peter and Valentinus Tschudi,[35] as well as by Herudaeus, whom I delight to gratify because of their great and exceptional gifts.

Farewell. Basel, in the year of
Christ, 1516, and on the
fifteenth day of May
(Ides).

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34. Unfortunately, the "happy return from Syria" was not duplicated on the occasion for Falk's next diplomatic journey to the Near East. On his way home from a second mission in 1519, he died on the Island of Rhodes, and was buried there. (Fritzsche, p. 20).

35. The two Tschudi were cousins, members of an illustrious Swiss family (see Hulme, Renaissance and Reformation, p. 277). Valentinus succeeded Zwingli as pastor of the parish church in Glarus. Both Tschudi were Glarean's pupils and life-long friends. Many references to them may be found in both biographies. One comment of Valentinus on Glarean cannot be overlooked. Writing to Zwingli, his former teacher, Valentinus says: "I have learned to know the cast of mind of our most devoted teacher, Glarean, and his mode of thinking in importing the precepts of the finest scholarly disciplines. Whatever he loves, he ardently promotes, and contrarywise, for any person or thing

PETRO FALCONI CONSVLI APVD FRIBVRGVM HELVETIORVM BONARVM LITERARVM MECOENATI HENRICVS GLAREANVS S.

CVm uiderem ætate nostra, ceteras disciplinas liberales non infeliciter toto passim orbe iam ἀναζωπυρεῖσθαι, Petre Falco, & meum, & patriæ communē decus, mirum unam Musicen a neminē uindicari, præsertim omnium antiquissimam, & in tantum priscis sæculis in precio habitā, ut huius nomine omnis eruditio censeretur, & qui literas nesciret, ἄμουσος appellaretur, & prorsus indoctus haberetur, qui Musices esset rudis. Vt ne commemorem, quod Plato hanc adeo putat ad Rempub. pertinere, ut diligētissime de ea caueri, tot eximijs tum apud Græcos, tum apud latinos philosophi, summa cura de Musica prodiderūt. Aggressus sum igitur, & hanc p̄ mea uirili pristino splendori restituere, cōposita ex phantissimis autoribus Isagoga, pusilla quidē illa, sed non pusillo labore, quo nostra qualicunq; industria, & bonæ spei iuuenes ad priscæ uetæq; Musices studiū, & eruditos ad candē pleni? assurgendam extimularē. Qua quidē in re, utinā tam dilucidus essem q̄m sum breuis. Sed licebit alias eadē sub incudem renouata, elimatiora reddere. Libuit interim hoc qualicūq; libello, nouo magis cp̄ elaborato Falconi meo, feliciter e Syria reduci gratulari, præsertim id efflagitantibus iamdudum Scudis meis Petro & Valentino, una cū Hirudæo, quibus ob egregiam indolem nō illiberenter gratificor. Bene Vale, Basileæ. Anno Christi. M D XVI. ad Idus Maias.

QVID SIT MVSICA, ET QVAE MVSICO PERPENDENDA. CAPVT I

MVsicen ex nostris alij recte modulandi scientiam definiūt, alij artem concinnitatis in uocibus motibusq; collocatā. Bachius speciem quandam meli, & eorū quæ circa melos oī uersant. At Seuerinus libro. V. ca. 1. Musica est (inquit) facultas acutorum, & grauium sonorum differētias, sensu & ratione perpēdens. Quā definitionē, si diligēter introspexeris, uidebis propemodū, & quid musicus inquirat, hoc est circa quē negociū uersetur, & q̄ pacto recte Pythagorici præcipiūt, nō omne iudiciū sensui, sed nonnihil rationi quoq; permittendū. Est eiñ Musica de sono & cōsonantia. Sonus uero absq; pulsu & percussione minime redditur, pulsus atq; percussio nullo pacto esse possunt, nisi præcesserit motus, & motuum quidē, alij sunt uelociores, alij tardiores. Eorūdēq; motuū, alij sunt rariores, alij spissiores, ex tardis itaq; atq; raris motibus, graues fieri sonos, necesse est, ex celeribus autem & spissis, acutos, id quod in neruis facile quis attendet. Ex quibus liquet, omnē sonum quantitate aliqua consistere, atq; ea quidem finita. Quantitas autem omnis rationem habet, plures igitur soni rationem siue collationē inter sese habeant, oportet. Vt enim in numeris est, qd̄ hic absolutus omni comparatione, tantum ut quid sit, quæ uelli accidant, inquisitionem requirit, alter uero alteri compa

A 1 ratus,

Chapter I

What is Music and What Matters should be Considered by the Musician?

Among our contemporaries, some define music as the science of intoning correctly;[36] while others call it the art of skillful joining together of tones and rhythms. It is, according to Bacchius, a certain kind of melody and those things pertaining to melody.[37] But Severinus in Book V, Chapter 1, says that music is the faculty of weighing differences in grave and acute tones by sense and by reason.[39] If you will look carefully into this definition, you will also see what the musician is inquiring after. The whole matter hinges on this point, on which the teachings of the Pythagoreans are right, that all judgment should not be left to the senses, but that reason too should play a role.[40] For music originates in sound and consonance. Sound, however, is not given out without pulsation and percussion, and pulsation and percussion could not be unless motion came before, and of these motions, in sooth, some are faster and some slower; from slow and less frequent motions, low-pitched sounds are necessarily made, and from rapid and closely-packed motions, the high-pitched are produced, as anybody may easily observe with strings.[41] From this it is evident that all sound consists of a certain quantity, and this quantity is limited, i.e. bound by rational terms. Now all quantity has ratio, so it follows that the several sounds have ratio and relationship between themselves. For, as in the case of just numbers, it must be determined first merely what the quantity is, or what happens to it; but as soon as one is compared to another, it is necessary to investigate the proportion between them, so it is in the case of sound: for in this too, we may first simply inquire, as the physicists do, what it is and what happens to it, but after that, compare one sound with another to determine the relationship between them,

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which he detests (and I say this with his permission!) his wrath and scorn are unbounded!" (Zwingli, epistol. MDXVII, VI, Schreiber, p. 36).

36. Musica est recte modulandi scientia. The classic definition of the ancient theorists, transmitted to the Middle Ages by St. Augustine.

37. From the Eisagoge technes musikes of Bacchius Senior, (Amsterdam: Elzevir, 1652), p. 1.

38. Boethius, whose full name was Anicius Manlius Torquatus Severinus Boethius.

39. In the Friedlein edition of the De musica, this is Book V, Chapter II, lines 4 and 5, p. 352.

40. Cf. De musica, Book I, Chapter IX. This is a fair statement of the Pythagorean position, which does not exclude the findings of the ear, but which does maintain that the mathematically determined ratios of the intervals are of musical significance, and should be accurately judged to be enjoyed. Cf. Helmholtz, Sensations of Musical Tones, (second English edition, Dover Publications, New York, 1954), p. 229-230.

41. Cf. De musica, Book I, Chapter III (all); Book V, Chapter IV (all).

which is the special business of the musician. For from this we measure consonance and dissonance, and the nature and difference of musical tones in general.[42]

The relationships between sounds are chiefly understood according to their acuity and gravity. For any sound as compared with any other is either equal to it, and no difference exists, or else unequal, and this can happen in two ways: the larger is compared with the smaller, or vice versa. From both of these arise the five numeric genera, which we shall explain.

The first genus is multiplex, when the larger number contains the smaller within itself two or three or more times, with nothing left over and nothing lacking. The second genus is the superparticular, where the larger number contains the smaller number within itself, and one part left over; this part may be a half, as in the case of the secupla or sesquialtera proportion, or a third, as in the sesquitertia, and so on in regard to the other numbers. The third genus is called the superpartial, when the larger number contains the smaller within itself with some parts left over; if two, it is superbipartient, if three, supertripartient, e.g., five to three will be superbipartient, seven to four, supertripartient, and so on in the same manner. The fourth genus is composed of multiplex and superparticular combined, when the larger number has within itself the lesser number, two or three or any number of times, plus one part over, as five to two, or seven to three. The fifth genus is combined from multiplex and superpartial, when the larger number contains the smaller number more than once, plus more than one part over, as in the case of eight to three. But we are not obligated to go on further concerning these, since it is all thoroughly and ingeniously treated by Severinus in many chapters.[43]

Now let us present some examples applying to sounds. Now if unequal sounds are produced, it is necessary that one should be higher than the other. And this holds true whether they are in the duple proportion, as in the octave, in the triple, as in the octave plus a fifth, or in the quadruple as in the case of the disdiapason, or double octave. This last consonance is the greatest in range which the ears of the musically educated are willing to accept, as Erasmus, our teacher and intellectual father rightly contends in his discussion of the disdiapason.[44] This is equally true in the instance of the three to two proportion, as in the diapente, or the four to three, or diatessaron, and this may be observed not only in the genera of proportions but also in weights which exceed each other in lightness and heaviness in the same

42. Cf. De musica, Book II, Chapter III, (all).

43. Cf. De musica, Book I, Chapters IV-VI (all).

44. Though not a life-long devotee of music, as Glarean was, Erasmus knew music first hand. As a school-boy, he sang in Obrecht's choir at the Cathedral of Utrecht, (Encyclopedia Britannica, VIII, p. 677). In later life, he kept in touch with Obrecht. On the occasion of the death of Ockeghem, Erasmus contributed a "Lamentation," (Lang, Music in Western Civilization, p. 186), and he took enough interest in a promising composer to send two of his pieces to Cardinal John de Medici, (later Pope Leo X). (Nichols, Epistles of Erasmus, Vol. I, p. 337, Epistle 158).

manner.[45] And in musical "instruments," as they call them, we see that magnitude enters into the matter, since large instruments give out a big sound and small instruments a thin one. The true musician then considers sound in the light of reason; in view of this fact, he principally makes use of number, applying it as an instrument, as it were, without which he could not grasp the fine points of detail. However, the musical theorist is inquiring not into number but into sound whose relationship is explained by means of number. It is quite clear to me that those who hold the numbers of the sounds to be the object of music, though they speak neatly enough when I discuss it with them, are really talking about something they do not readily understand, although they express themselves with vehemence.[46] As if, because money is needed, they consider it merely a question of daily grubbing. But let them say what they will, I do not wish the youth to be seduced by these infantile — for they are worse than puerile — babblings. This one thing we shall add for the benefit of those knowing mathematics, that those things which are "certain" may be all too certain, and nothing is more injurious than those sophistries and patently stupid quibblings. Moreover, there is no better refuge from serious study than those insoluble puzzles in which the truth itself becomes so involved that it never emerges, and the most certain things become the most obscure.

As for the rest, there should also be added to our instruction this teaching of the Pythagoreans, in which we are admonished that the consonances themselves are to be explored by the ear, but the matter of measuring the distances between them must be consigned to reason. This definition Severinus himself explains meticulously, but we have said enough of general musical science for the moment. Now, however — since it is for the sake of young students that we shall have elaborated on this — we shall take up certain matters of detail. For it is highly necessary in our day to keep a thing which has been in use for so many years not merely by refusing to reject it, but by teaching it thoroughly in order that usage should not deteriorate into abuse from within.

Let the boys learn first, therefore, that there are six signs for the syllables now in universally accepted usage: ut, re, mi, fa, sol, la. With these, we conveniently express the tones themselves; these, having once been adopted, have been kept in use, not because no others could possibly have been taken, but because it was necessary to use something of the kind, and these served the purpose. Among these they term ut and re the graves, or low-pitched, la and sol the acute,

45. Glarean's interest in weights and measures was part of his larger interest in mathematics and physics, including their historical development. Late in his career, he published a small but painstaking monograph on the As, or grain, (the standard unit for weights, measures and coinage). This was published by Froben in 1550 under the title Liber de Asse et partibus eius.

46. Here Glarean draws an even clearer distinction between the true Pythagoreans who use both ear and reason, and the dry-as-dust pedants who thought of the numbers as an end in themselves, and thereby gave the word "Pythagorean" a black-eye.

or high-pitched, and mi and fa the middle ones; or according to others, ut, re, mi are called the inferior and fa, sol, la the superior register. Moreover, among the early musicians there were three sorts of tuning [modulandi] — known as the three genera. One of these is the diatonic, which proceeds by the minor semitone, whole-tone, whole-tone.

The Diatonic Genus

2304		Nete hyperbolaeon [aa]
	tone	
2592		Paranete hyperbolaeon [gg]
	tone	
2916		Trite hyperbolaeon [ff]
	minor semitone	
3072		Nete diezeugmenon [e]

The second genus is the chromatic, which consists of a minor semitone, a major semitone, and the semiditone or minor third as shown by the diagram:

The Chromatic Genus

2304		Nete hyperbolaeon [aa]
	semiditone	
2748		Paranete hyperbolaeon [$g^b g^b$]
	major semitone	
2916		Trite hyperbolaeon [ff]
	minor semitone	
3072		Nete diezeugmenon [e]

The third category is the enharmonic, which is made up of two dieses[47] and two tones. You may also call the diesis the diaschismata, concerning which we shall speak later on. This is the example:

The Enharmonic Genus

2304		Nete hyperbolaeon [aa]
	ditone	
2916		Paranete hyperbolaeon [ff]
	diaschisma	
2994		Trite hyperbolaeon [ff -1/4 tone]
	diaschisma	
3072		Nete diezeugmenon [e]

47. Diesis literally means "cutting." Used to designate microtones in general. Here the quarter-tone is meant, which is the microtone used in the enharmonic genus. See De musica, Book IV, Chapters VI and VII, pp. 318-324 for Glarean's source material on the genera.

In our day, the last two genera have fallen out of use among musicians[48] and we now use only the first genus, which Guido — or whoever else it may have been, who was, in any case, a well-instructed musician — arranged in learned and practicable fashion in a certain scale which beginners could memorize without great labor. On this all the business of music depends, and to it all musical matters may be referred. Therefore, in order to be of use to beginners, we have given below not only the form itself, but some explanation of it. I advise that young students learn by heart the Greek names for otherwise, no matter how young a beginner you may be, unless you have these names by memory, you seek true musical knowledge in vain. Why is it that true musici — that is, true scholars in the field of music — are so few in number, in our day, while there are so many ordinary cantors? The reason is that so few know Greek, although I certainly expect here that you should know not only this but that you should be skilled in numbers and the abacus[49] as well. Then, if you know how to play the cithara, you will bring a substantial baggage to this business.[50]

Now the scale which follows [see p. 116] is that of Guido, which Franchinus of Lodi places with good reason at the beginning of his Musices[51]

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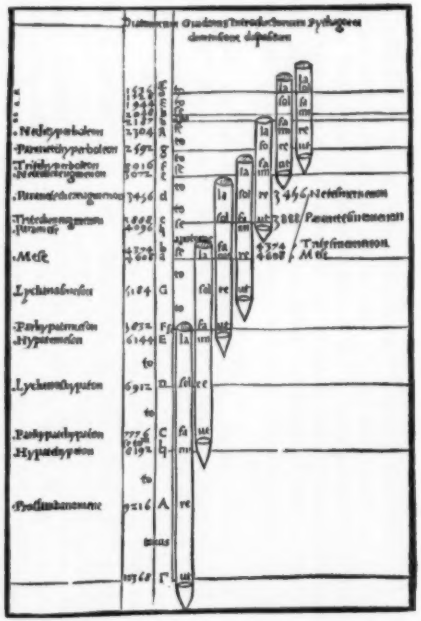
48. Although Glarean's generalization is not, in its broad sense, untrue, it is interesting to note that at the very moment he made it, the movement to reincorporate the chromatic and enharmonic genera into the diatonic system was already germinating among the Italian instrumentalists. This movement reached its high point with Glarean's own younger contemporaries, Nicola Vicentino (1511-1572) and Gioseffo Zarlino (1517-1590).

49. See Boethius, Ars Geometriae, Friedlein, pp. 396ff.

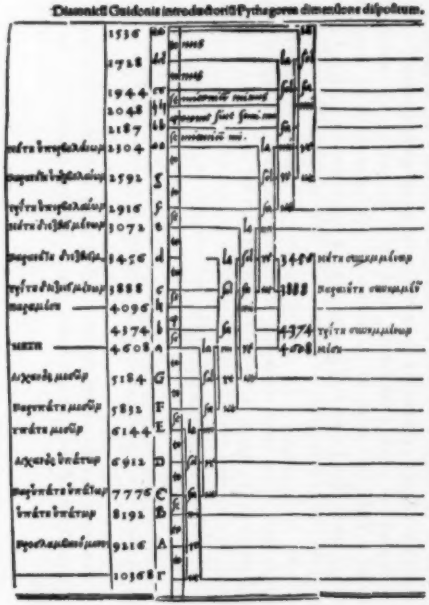
50. In modern parlance, the passage would read: "The serious student of music should have a solid language background, an understanding of the elements of physics and mathematics, and the ability to play an instrument!" (Educators please note!)

51. Full title, Musice utriusque cantus practica excellentis Franchini Gafori laudensis libris quatuor modu latissima, (Milan, 1496). Usually referred to as Musica Practica. The Introductorium (see facsimile) comes from the chapter entitled: Musicae Actionis Liber Primus. (The word introductorium was currently used as a substantive in the late Middle Ages, (see Mediaeval Latin Word List, Baxter and Johnson, Oxford University Press, 1947), frequently with the sense of diagram, as in the present instance. For verification of the numbers of the string lengths, see Boethius, De musica, Book IV, Chapter VIII, p. 324).

From the Musica practica of Gafurius



From the Isagoge of Glarean



Chapter II

Those Things which should be Noted in the Introductorium of Guido, including a Discussion of the Five Tetrachords and Intervals of the Strings

Before anything else, Guido[52] put down the Greek names of the notes — for the reader should remember that whatever we have of this branch of knowledge, as of all the others, we have received as an inheritance from the Greeks — concerning which the revered Severinus discourses at length in Book I, Chapter 20, telling us how many they are, how they were combined and why their number was increased.[53] For at one time, the beginning of the science of music was so crude that only four strings constituted the entire corpus of harmony, and this they called the tetrachord. Thereafter little by little it increased to the hexachord, heptachord, octochord, henneachord and finally into fourteen strings. Afterward a supplementary string was added, i.e. a proslambanomenos, or "added note," and this term was retained as the name of the note itself. Nevertheless, the division of the notes into tetrachords still remained. There are, therefore, in this series of notes, five tetrachords in all of which the ratios of the outside tones sounding the consonance of the diatessaron, or perfect fourth, is the sesquitertial, or four-to-three proportion. Concerning these, in all the different kinds of tuning, Severinus discourses at length in Book IV.[54]

The first tetrachord is the hypaton, composed of the first "strings" or "notes," or, as Albinus states (as quoted by Severinus), the principal ones.[55] These are the four notes: hypate hypaton, parhypate hypaton, lichanos hypaton, hypate meson. The second tetrachord is the meson, or "of the middle." It comprises these four notes: hypate meson, parhypate meson, lichanos meson and mese. Now all the diatonic tetra-

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52. Glarean might better have said "the Guidonians." Guido's presentation of the solmization syllables was confined to showing that the series of notes from Γ gamma (G) up to E could also be duplicated between C and A. The elaboration into seven "hexachords" came later. See G. Lange, Zur Geschichte der Solmisation, (S.I.M. - I, 1900), p. 535.

53. De musica, Book I, Chapter XX (all), pp. 205-212. This chapter is a semi-mythological history of the Greek scalar system in capsule form.

54. De musica, Book IV, Chapters VIII to XII (all), pp. 325-335. These chapters are highly important in the history of tuning and scale-construction. They are indispensible for an understanding of the treatises of the 15th and 16th centuries.

55. The terms hypate and hypaton mean "highest" in the sense of principal or most important, and were never at any time intended to mean highest in the sense of pitch. Says Boethius (Book I, Chapter XX, lines 11-13): "Inque his quae gravissima quidem erat, vocata est hypate quasi maior atque honorabilior unde Jovem etiam hypaton vocant." (And among these the one lowest in pitch is called the hypate (chief), just as they also call Jove the hypaton.)

chords have the semitone in the first [i.e. lowest] place. Mese and paramese are separated by a whole-tone, not a semitone. From this, two different tetrachords are born, one the diezeugmenon, or tetrachord of the disjunction, the other the synemmenon, or tetrachord of the conjunction. There is, therefore, a third tetrachord containing the four notes: mese, trite synemmenon, paranete synemmenon and nete synemmenon. The fourth tetrachord is again the diezeugmenon. Its notes are paramese, trite diezeugmenon, paranete diezeugmenon, and nete diezeugmenon. Of the fifth and last, the hyperbolaeon, these are the notes: nete diezeugmenon, trite hyperbolaeon, paranete hyperbolaeon, nete hyperbolaeon.

And now this is enough concerning these five tetrachords, by means of which, with the addition of the proslambanomenos to the list already given, will be constituted the complete system of the double octave, whose middle tone is mese. This extended system is in the 4 to 1 or quadruple ratio, which closes the ambitus of the consonances [i.e. of the combined tetrachords] in such a way that it imposes an end to the series. The ears of the discerning do not easily suffer it to exceed this range. The remaining intervals — and we shall speak of their quality and quantity later on — may be memorized without great difficulty.

And now to go on, a number is herewith added to the strings or notes, which contains the proportions of all the dimensions. For the numbers of proslambanomenos and mese appear in the double proportion, being 9216 and 4608 respectively, while the numbers of mese and nete hyperboleon, i.e. 4608 and 2304, show the same proportion. These sound without effect to practiced ears because they are too familiar. On the other hand, that which they do not understand rings falsely both to the unlearned and to the one who is not ignorant of arithmetic; we find it necessary, therefore, to offer beginners some guidance in this matter. And we believe that they should first be taught the letters and solmisation syllables.[56]

For there are seven letters, which they variously term "keys," "regions of tones," and "places of the voices," which are distinct in quality. By repetition, their number is extended to twenty, these being later additions. The syllables are named in this way: A re; B mi; C fa ut; D sol re; E la mi; F fa ut; G sol re ut; a la re mi; b fa ♮ mi; c sol fa ut; d la sol re; e la mi; f fa ut; g sol re ut; aa la mi re; bb fa ♭ mi; cc sol la; dd la sol; ee la. And since we begin counting from the lowest letters, they have placed the Greek letter gamma (Γ) at the foot, so that nobody may be so forgetful of the truth, nay I will even be bold enough to say aloud, so ungrateful to the Greek Muses, as to be ignorant of the fact that this science comes from them.

After Γ come seven letters in this order: A, B, C, D, E, F, G, which are written as capitals in order to distinguish them from the following seven, a, b, c, d, e, f, g, which appear as small letters.

56. For a quick check on the ensuing passage, see Harvard Dictionary of Music, (Harvard University Press, 1947), article "Hexachord."

For the same reason, there are added above these five more, which are given paired letters, aa, bb, cc, dd, ee. And this constitutes the order of letter-names, in which b fa ♮ mi counts only for a single degree, since, though there are two in nature, there is reason for putting only one in the melody. But we must explain this more fully later on. Now the usage is among the younger generation to speak of the distance from one letter to another adjoining it as a second, from one to a third, as a third, etc. And by the same manner of calculation, from one letter to another of the same nature, as from A to a, or C to c, is an octave, that is to say, an eighth. And after this, they added a certain rule which is not as inerudite as it might perhaps seem to some — that since there are three solmisation syllables on a middle a, la, mi, re, there should also be, by the same token, three syllables on A and aa. Likewise, the same should occur on ⊓ as on G and gg, for ⊓ is of the same nature as the other two, and therefore, merits the syllables sol, re and ut. And these can be accommodated, if necessary, without undue license. And they add this caution, that if any degree be added above or below the letters of this scale, it should be referred back to the octave. So that if a note goes below ⊓ it is either fa or ut which is easily ascertained from the octave above it which is F fa ut. Some who are ignorant, incorrectly call these syllables ficta; they are not, however, like those which are out of place, as we have said, but are found at the octave, as mi on A or re on ⊓ . Since "ficted" notes are only those which are not in their true places, (and in this we do not count the octave), as they normally occur in practice, only examples such as fa on E, or mi on F are rightly termed ficta.

But Guido did not describe the more extended form, for this reason: the natural human voice has its own limits, and any melody of whatever tone or trope should remain within these bounds. In musical instruments, however, just as Guido added to the Greek scale one note below and four above, it will be allowable to add to the Guidonian system other scale-degrees, according to the law that we have mentioned. The first thing, therefore, will be that the students become accustomed to the usual places of the several tones; later on, they will understand them, when performing, without any difficulty. The point might be expressed this way: they should not think mi where fa is to be sung, nor fa where mi belongs.[57]

Chapter III

Concerning the Permutation of the Syllables

Among the various other matters which we have spoken about in the previous chapter, this should be especially noted: Guido[58] set up seven hexachords, or series of the six syllables; or, to be more ex-

57. See Dodecachordon, Book I, Chapter VI, pp. 12f. Miller, pp. 82ff.

58. Not Guido himself, but the "Guidonians." See note 52, Chapter II, p. 117.

plicit, seven times ut, re, mi, fa, sol, la. These, moreover, he arranged in such an order that they mutually displace each other, both ascending and descending, so that syllables of the same nature — "hard" with "hard" and "soft" with "soft" — harmonize most smoothly.[59] For example, the first hexachord which has its beginning on Γ is displaced by the second hexachord, which originates on C. It is, therefore, necessary that a permutation be made on these, if not of the voices, certainly of the symbols, ut, re, mi, fa, sol, la. And this permutation takes place without raising and lowering of the voices in pitch, except perhaps on the degree b, when mi may be changed into fa, or fa into mi by means of the apotome.[60] For if any raising or lowering of pitch were to have been effected, the syllables would not be fitted together smoothly, a point which we shall take up very carefully later on.

In our day, the teachers of music theory expound this permutation volubly, albeit so badly and with so many wrappings and trappings that one scarcely knows whether they are offering explanations or emitting oracular utterances. For they begin in this way, with a distinction: certain scale degrees have one solmisation syllable, and on these no mutation is made. And so they put it! As if in sooth, there were anyone so stupid as not to know that there could be no permutation without at least two syllables! Going on in this manner, if two syllables occur at the octave of the degree in question, would they derive a new law from their "rule," and say that no permutation should be made at the octave? And what, moreover, is more unintelligent, than when someone is going up from Γ to F, to ask into what syllable the la should change when E is reached, for what other pray tell is available except mi? Likewise, when going down from F to Γ, when one reaches C, why inquire into what syllable one should change the ut when there is no other possibility except the fa? Lastly, see how carelessly they explain the scale-degrees which take three syllables — six mutations with so many nodes (I meant to say modes!)[61] that in the meantime one could learn to sing excellently by heart, not to mention learning how to make the mutation!

As a matter of fact, they could teach this with one single precaution, and with no labor, by paying attention to the note b, on which indeed the entire matter hinges, for it is of capital importance whether mi or fa is to be sung there.[62] Accordingly, musicians are accustomed to place a small and lightly traced letter b as often as this note has the

59. For quick reference see Harvard Dictionary of Music, articles "Hexachord," "Solmization," "Mi-fa." See also Reese, Music in the Middle Ages, pp. 149ff; Oxford History of Music, Vol. I, pp. 283ff. Lange Zur Geschichte der Solmisation gives a full discussion of the historical development of the system.

60. I. e. by the major semitone. For a fuller explanation of this point, see Dodecachordon, Book I, Chapter X, p. 27, Miller, pp. 103f.

61. I. e. "knots" in the sense of enigmas or puzzles. The word "nodes" had this meaning in 16th-century English usage, thus making it possible to carry Glarean's play on the words "nodus" and "modus" over into the translation. (See Oxford Universal Dictionary).

62. See Dodecachordon, Book I, Chapter IV, p. 6, Miller, p. 74.

fa, but whenever it has mi, it is their habit to place nothing. This was, for the time being, enough for beginners. But if anyone says, "It can be that the codex errs," I will reply that one should not mix this question with the other. Moreover, it will not be possible to know this before making a little explanation of the tones or tropes to be learned. For this much is known, that all the tones have mi on the b-key except the sixth and seventh, which frequently, as the musicians perform the melodies in our day, have the Bb, unless it happens, as it often does, that a deliberate permutation of the quality is made, which they indicate in some cases by the "hard" b ♮, and in others by the Bb, or "soft" B, as they call it.

But these things are really learned by use rather than by means of many rules, and to say to which mode a certain chant may belong should not be taught by one who is explaining the permutations, but by the one who is discussing the modes themselves. For this reason, a passage on the subject of the latter will be more appropriate later on. We add this, however, that the mutation is never made in the course of the long leaps, but the syllable is carried as, for example, from mi to mi, or from fa to fa, especially on the diapente and diapason.[63]

As for the rest, the distinction they draw between "mutation" and "permutation" impresses me very little,[64] much less all the types of quality and quantity of mutation, and I know not what portentious forms of proprieties and deductions. Add to these the even more esoteric ones, concerning "triple chant" or the "triple differentiation of the hexachords" according to these proprieties.[65] For not every chant which has a b ♮ is "hard," nor is every one which contains a Bb properly called "soft."[66] It will perhaps be preferable to call a certain hexachord "conjunct" because it has a Bb, as the third and sixth, a certain other disjunct, because it obviously has a b ♮, such as the

63. Ibid., Book I, Chapter VI, p. 12, Miller, p. 82.

64. Linguistically, Glarean is on safe ground. Mutatio and permutatio are virtually synonymous. (See Harper Lexicon). Some theorists, however, drew a distinction which was musically justifiable. Marchettus of Padua, for example, (Lucidarium, Gerbert, Scriptores III, p. 89) defines mutatio as interchange of syllable on a single note without change of pitch (as from ut to re on G), and permutatio for placing a sharp or flat where it did not occur before (as when mi on B♮ is changed to fa on B^b, or fa on F becomes mi on F#). Permutatio, in short, is reserved for musica falsa. Here again, Glarean disregards the rising tide of chromaticism which was threatening to engulf the old modal order at the very moment he was arming himself to defend it.

65. Various terms for the "hexachords," found in a number of treatises, particularly the early ones. The recent rise of printing had made accessible many theory books, both old and new, and a veritable Tower of Babel of musical terminology resulted.

66. The terms durus and mollis ("hard" and "soft" neuter forms, durum and molle) referred to the actual shape of the signs ♮ or # on the one hand, and B on the other. As Glarean points out, this had nothing to do with the musical effect of the different hexachords.

first, fourth and seventh. Finally, one variety — that of the second and fifth — is considered unalterable because it never reaches the note B.

In the meantime, because it concerns nature, tyros in this study must be admonished to make themselves familiar with good and skillfully contrived melodies. For if we become like those things about which we hold our daily conversation, surely the same thing holds true in regard to the songs we sing, in which there is so much of artistry that I believe that nowhere else are ingeniousness and expression so completely and convincingly shown. Moreover, when we become well acquainted with the melodies, we not only express their nature beautifully, but learn to be like the expressive passages.

But we have enlarged enough, and more than enough, on these matters.

Chapter IV

Concerning the Intervals and Consonances

In order that we may discuss this in general from the very beginning, we may say in passing that there is one set of names for the intervals now in common use, whereas another was current among the musicians of the earlier period.[67] We shall endeavor to explain both, however, since they are both serviceable in our time. The later authorities therefore, setting up fifteen intervals, define them in this way: the unison, they say, occurs when the same syllable is repeated over and over on the same degree of the scale, as ut, ut, ut, re, re, re. It is, moreover, loosely termed an interval, although it is not one in the literal sense, for the same reason that unity is reckoned as a number among the Arithmetical philosophers.[68] The tone, or perfect second is the distance from one note to the next, as from ut to re, re to mi, exception being made only of mi-fa, taken consecutively. These last, however, form a whole-tone with the other notes above and below. The semitone, or imperfect second, occurs only between mi and the adjacent fa.

It is a question here only of the minor semitone, since indeed, as one may gather from the foregoing, the major semitone is unsuited to

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67. Glarean's two points of reference are the intervals of Greek theory as presented by Boethius and the intervals of late medieval theory as presented by Gafurius. For an introductory idea of the evolutionary process which led from the one to the other, see Harvard Dictionary of Music, (Harvard University Press, 1947), article "Consonance," sections Ia and III.

68. See Boethius, De arithmetica, Book II, Chapter VII, Friedlein, p. 16, De musica, Book II, Chapter XV, p. 244.

the diatonic genus.[69] The ditone, or perfect third, is the product of two whole-tones: there are two species of this interval, from ut to mi, and from fa to la. The semiditone, or imperfect third, is made up of a whole-tone and a hemitone.[70] There are also two species of this interval, from re to fa and from mi to sol. The tritone, or "hard" fourth, is composed of three whole-tones, from F to b ♮, having absolutely nothing consonant in its nature. The diatessaron, or "just" fourth, consists of two tones and a minor hemitone. There are three species, from ut to fa, from re to sol, and from mi to la. All the genera of melic music have this consonance between the extreme strings, or outer tones of the diatessaron, but have the middle tones sometimes in different ratios.[71] The diapente or perfect fifth is composed of three tones and the minor hemitone, of which there are four species, ut-sol, re-la, mi-mi, fa-fa. The semidiapente, or imperfect fifth, consisting of two tones and a like number of minor semitones, as from B ♮ to F, is more frequent in mensural melodies, as they call them, especially in the highest voice from fa on bb [Bb] to mi on the highest e, which is unsuited for any consonance.

The tone plus a fifth — for it is in this way that this interval and the two following ones are designated — is the perfect sixth, composed of four tones and a minor semitone, as ut-la, ⌐-E. The semitone plus a fifth, or imperfect sixth, consists of three tones and two minor semitones, as mi-fa, that is, from E to c. The ditone plus diapente (major third plus perfect fifth), or perfect seventh, is composed of five tones and a minor semitone, as ut-mi, or from C to b ♮. The semiditone with diapente (minor third with perfect fifth) consists of four tones and two minor semitones, as from E to d.

The diapason is the integral or complete octave, composed of five tones and two minor semitones: of this, there are seven species, as from the seven capital letters to the seven smaller ones. In general, any interval has one species less than the number of tones it contains. So the perfect fourth, with its four scale-steps, has three species, while the diapente with five scale-steps, has four. Thus with the octave, the number of its tones is eight, of its species seven. Of this, they are accustomed to present an illustrative diagram (given here since it is pertinent to the discussion, and there will be a word concerning the modes, later on) on lines for the species of diatessaron, diapente and diapason, in the manner in which Franchinus presented it.[72]

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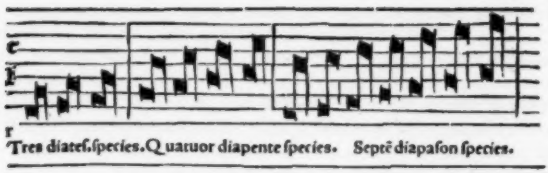
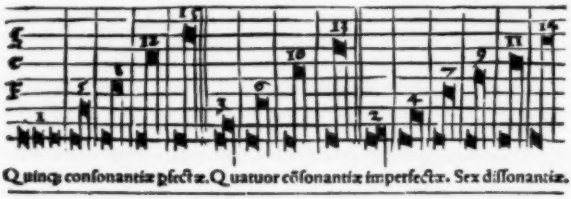
69. The major semitone, or apotome, equal to 114 cents, is the chromatic half-step, as from B^b to B-natural -- obviously out of place in the diatonic scale, as Glarean points out. (See Harvard Dictionary of Music, article "Semitone").

70. Glarean uses the terms hemitone and semitone interchangeably.

71. The outer tones of the tetrachord were fixed in pitch, being the 4:3 ratio in all three genera. The two middle tones were moveable; they were tuned up or down to change from one genus to another. See Boethius, De musica, Book IV, Chapter XIII, pp. 355ff (Friedlein).

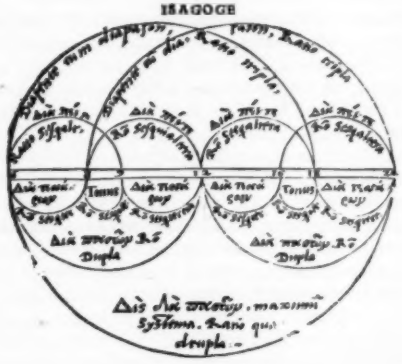
72. Gafurius, Practica musica.

If, moreover, intervals greater than the octave occur, they put them together in the same manner in which you have seen some of the previously mentioned intervals to be compounded, so that they say "perfect ninth" for the diapason plus a whole tone, and "imperfect ninth" for the diapason plus a semitone. The others are designated in the same way up to the disdiapason or double octave, which prudent composers do not exceed. Of these intervals, some are perfect consonances, others imperfect consonances, and still others dissonant. Of these, they have been accustomed to append a general diagram of this nature:

In this way, therefore, they dispose of the difficulty; however, since it is no trivial question, I do not consider it to be thus lightly solved. For the truth is that some things have been well explained concerning the species of consonances, while others seem to have been very poorly presented. Nevertheless, we tend to minimize this, for some include among the consonances — more by chance than through calculation — the diapente plus the double octave, and the ditone plus the double octave. The second of these I believe to be accepted anywhere. For musicians who are above reproach frequently introduce the latter into their motets. The former, however, I would be loath to admit, and consider it an error greater than I feel able to condone.

But both of these, as well as the major sixth plus double octave — which surprises me still more — are all sometimes used by the learned polyphonist Pierre de la Rue, more perhaps in order that the highest voices should be brought into play than that they should make beautiful consonances. But so much for this.

The early practice, when all things were chaste and seemly, and not overlaid with a multitude of spurious ornaments — I might better have said trivialities — made use of very few consonances. We arrive at this conclusion mainly from the fact that one will scarcely find more than six consonances mentioned by the celebrated writers. And when

they enumerate the order of consonances, they give only five, as anyone may see in Severinus, Book II, Chapter 16, as well as in the two following chapters.[73]

We have decided, for our own part, to say a few words about their ratio, following the Pythagorean order. For they have always said the octave to be the first of all the consonances, and in the duple ratio, as twelve to six or twenty-four to twelve. The diapente plus octave, however, is in triple ratio, as eighteen to six or twenty-four to eight. The diapason, or double octave, is in quadruple ratio, as twenty-four to six, and the diapente as nine to six, twelve to eight, eighteen to twelve, or twenty-four to sixteen. And the diatessaron is in the four to three or sesquitertial ratio, as eight to six, twelve to nine, sixteen to twelve or twenty-four to eighteen. The tone, in our times, in the nine to eight proportion, has been banished from the society of the consonances, for just what heinous crime I do not know.[74] But I would not be concerned about the tone and its exile if this had not also happened with less excuse to the perfect fourth.[75] I do not need to say that on this point, Ptolemy and the Pythagoreans do not agree. The Pythagoreans place the diatessaron among the consonances but deny that it concords with the octave. For this, Ptolemy rebukes them with good right.[76] In our times, the diatessaron likes to have the diapente beneath it, or else the ditone, for thus it is frequently used by our polyphonic composers. But of this arrangement, here is the diagram:



73. Friedlein, pp. 248f. The five intervals given by Boethius are: diatessaron, diapente, diapason, diapason plus diapente, disdiapason. He includes the epogdous or whole tone which is derived by "comparison" of the disdiapason and the diapente.

74. For the "heinous crime" of not being consonant when heard harmonically! Glarean does not take into account the shift from horizontal to vertical thinking in evaluating the "consonant" nature of an interval.

75. Idem.

76. Cf. De musica, Book II, Chapter XXVII, pp. 259-260.

Chapter V

What is the Phthongus, or Tone, and the Concinentia, or Harmonious Combination of Intervals[77]

Severinus in Book I says: "The phthongus is the incidence of the voice on a single definite pitch, which is emmelic, that is, adapted to the melody."[78] Some define the phthongus as a certain minimum part of the melos, others as a certain definite vibration of a single string; still others, for example, Ptolemy, as a sound holding to one and the same tone without any fluctuation of pitch. Just as unity is the beginning of number, the point of the line, and the moment of time so the beginning of harmony is the phthongus, playing the part of an element in this process, by means of which all melody is established and into which it is resolved.[79] The emmelic phthongi then are those which, when linked with each other turn by turn, give out a tone which is acceptable to the ear. If the contrary is the case, they are called ecmelic. The interval, indeed, is the distance between a low-pitched and high-pitched sound, according to the definition of Severinus.[80] Consonance, according to this same authority is the mingling of high- and low-pitched sounds falling smoothly and uniformly on the ear.[81] He says elsewhere: "Consonance is the concord of dissimilar tones reduced to a single entity."[82] There are some who think that Severinus in the first instance followed Plato and in the latter instance, Nicomachus. For Plato says consonance is formed in the ear, in this way:

> It is necessary that the swifter sound should also be the higher pitched. This higher-pitched tone, since it has preceded the low-pitched, reaches the ear swiftly, and having spent its force, it sinks lower, as if struck with a repeated impact and finally falls in with the low-pitched tone to mingle with it in a single consonance.

But this Nicomachus does not believe to be correctly stated. For he holds that consonance is not a question of similar things, but of dissimilar, coming together into one place and into the same consonance, but that if low were to be mixed with low, it would produce no consonance, since likeness does not effect this concord of tone, but unlikeness.[83] He analyzes the nature of the consonance in this way:

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77. When Greek music is under consideration, the terms "harmony" and "harmonious" should be understood in the Greek sense, as synonyms of "consonance" and "consonant." In monophonic music, intervals are measured laterally.

78. De musica, Book I, Chapter VIII, Friedlein, p. 195.

79. See Benjamin Farrington, Greek Science, (Pelican Books, 1953), pp. 46-52. This brief account of the Pythagorean number philosophy is very helpful for the student of early theory.

80. De musica, Book I, Chapter VIII, p. 195.

81. Ibid.

82. De musica, Book I, Chapter XXVIII, p. 220.

83. De musica, Book I, Chapter XXX, p. 221.

If two different strings are struck, those sounds will, if they are to merge, be commensurable in relation to each other; this same commensurability mixes with itself and blends the voices into a single consonance. But when they are incommensurable, and struck together, each one desires to go its own way and dissonance is necessarily created.[84]

And Severinus defines dissonance in this way:

Dissonance is the harsh and unpleasing clash of two sounds coming intermingled to the ear. For since they do not wish to blend with each other, each struggles with each in order to attain the goal intact. And since they are at odds with each other, both are transmitted unpleasantly to the senses.[85]

Chapter VI

Concerning the Partition of the Whole-Tone

It will perhaps be of value to offer some information about the intervals contained within the whole-tone, whereby our Isagoge may be more instructive. However, if anyone wishes a more exact exposition than our summary affords, let him turn to the third book of Severinus,[86] since for our present purpose these comments are enough.

And first there should be kept in mind an admitted fact long demonstrated among musicians that no superparticular proportion can be divided exactly in half by any known number; that is, between two numbers of superparticular ratio, no mean number or middle term can be expressed which, when compared to the lesser number would have the same ratio with it that it has to the greater number. Hence, the tone cannot be divided into two equal parts, but only into the major and minor semitone.[87] Of these two, the latter is called the limma or

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84. De musica, Book I, Chapter XXXI, pp. 221-2.

85. De musica, Book I, Chapter VIII, p. 195.

86. Boethius devoted all of Book III of the De musica (Friedlein, pp. 267-300) to the division of the whole-tone into the major and minor semitones, and into divisions smaller than the semitone (Chapter VIII). The material should be carefully studied by all interested in early theory, by all who wish to understand the essential differences between the Aristoxenian and the Pythagorean positions, and by all experimenters in microtonality, and by all who are interested in the music of the Near and Far East. If this were done, many a moot point would be cleared, and many an unfortunate statement either withdrawn or left unmade.

87. A superparticular proportion occurs when one number exceeds the other by one integer, e.g. 9:8, the ratio of the whole-tone. This cannot be divided equally. Proof: between the numbers 18 and 16 (9 to 8, multiplied by 2), place the middle term 17. This gives the

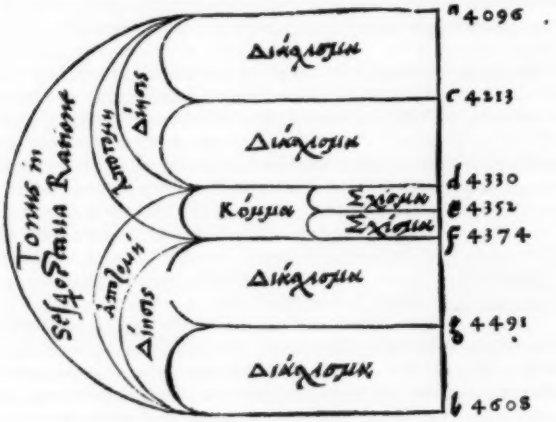
diesis, the former the apotome.

The diesis in turn is cut into two equal parts which are called diaschismata. Lastly, the excess by which the major semitone exceeds the minor is called the comma, and it in turn is divided into two parts which are called schismata. Philolaus, as quoted by Severinus, discusses these and appends the following definitions:

1. The diesis, he says, is the space by which the four to three ratio (diatessaron) exceeds the ditone (two whole-tones).
2. The comma is the space by which the nine to eight proportion (whole-tone) exceeds the minor semitones (two "dieses" as Philolaus uses the term).
3. The schisma is one half the comma.
4. The diaschisma is half the minor semitone, or "diesis."[88]

Nevertheless it should be pointed out that the term diesis does not conform here with what we have said above — that the enharmonic genus consists of a ditone plus two dieses (major third plus two quarter-tones), for there, "diesis" is given as the name for one half the minor semitone, which they usually call the diaschisma, but which Philolaus here terms the "diesis."

There follows a diagram of this:[89]



series 18-17-16. Now 18:17 is less than 17:16. Therefore, mathematically speaking, no equal division is possible. (See De musica, Book II, Chapter I, p. 270).

88. De musica, Book III, Chapter V, p. 276.

89. Adapted from Gafurius, Practica musica.

Let the distance a.b. represent a tone in the nine to eight ratio with two unequal parts, a.f. being the major semitone or apotome, and f.b. the minor semitone or diesis.

Or on the other hand, let a.d. equal the minor semitone and d.b. the major, while a.c. and c.d. are the diaschismata or equal parts of the diesis f.b. Lastly the comma, by which the major semitone exceeds the minor, is d.f., whose equal parts — I refer to the schismata — are d.e. and e.f. And in order that we may apply this to our own use, let b stand for mese or a la mi re, and f for trite synemmenon or Bb. Then let the line "a" equal paramese or mi on b♮. Therefore, this same Bb is a major semitone from its b♮ on the same degree and hence there is a greater distance between Bb and b than there is between b♮ and C, or between a and Bb. It follows from all this that a theory or speculation of this sort presents some difficulty, but may nonetheless be grasped by one who is reasonably intelligent and willing to work in order to acquire knowledge.

Chapter VII

Concerning the Modes of Music

In Book IV, Chapter 4,[90] Severinus says that the modes of music, which are also called both "tones" and "tropes," consist of the different species of the consonance of the octave. These same species could also be called "systemata" or "constitutiones." For a system is, as it were, the complete body of a measured intonation consisting of the conjunction of consonances, such as the perfect fifth, perfect fourth, and the octave.[91]

Now the octave is the system from proslambanomenos to mese, the degrees in between having also been added. Or again, it is from mese to nete hyperbolaeon, with the intervening tones. The disdiapason, or double octave, spans the distance from proslambanomenos to nete hyperbolaeon, with the intervening tones, and between the other degrees in the same manner as anyone may see from the Introductorium. Of the octave, therefore, there are seven species, or constitutions. If anyone should make them all higher or all lower, he will produce seven modes. The names of these are the Hypodorian, Hypophrygian, Hypolydian, Dorian, Phrygian, Lydian and Mixolydian. But even as I wrote these names, and realized that we are not now entirely agreed as to how the Ancients used them and that many of the things that are current in our day not only fail to accord with the ancient practice but sometimes are quite remote from them, it is not easy for me to put into words with what reluctance I have wielded my pen. But there will be perhaps, something which I may plead in my own behalf, that which I do not know I shall frankly state that I do not know, a course of action which the learned are all too loath to pursue. Furthermore,

90. According to the Friedlein edition, Chapter XV, pp. 341-343.
91. This passage is taken up above, pp. 102f.

since I am presenting the opinions of others rather than my own, and since we are conscientiously examining those things which are in daily use by the music teachers, there is no reason why anyone should be angry with me if my utterances seem to fall short of the sublime, especially since we are writing an Isagoge, that is to say, a Primer. What is more, if I considered myself free to do what many have the habit of doing, that is, to say the first thing that comes to mind, merely to appear learned instead of imparting learning to others in simple good faith, I could spread a whole forest of opinions before the studious reader. But why carry water to the river? It is open to anyone to talk idle nonsense, while it falls to the few to say things truly pertinent to the subject.

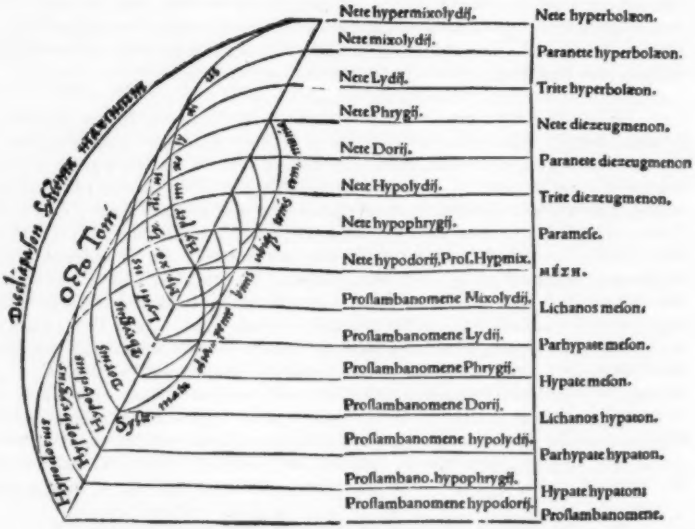
This one thing I shall say, more in candor than in arrogance, that there are few musicians in our times who can bring before the public anything worthwhile concerning the ancient tradition, either in regard to the genera of the melodies or concerning their modes, constitution or affectus. Especially those who teach this subject for a living and plainly wish to appear to themselves as high priests of the Muses when in reality they are the whole disdiapason away from them. So if, as Severinus holds in Book I, the only true musician is one who, having weighed the evidence, acknowledges the science of song to lie not in the bondage of practical necessity, but under the dominion of reasoned speculation[92] little wonder that you will find very few musicians today, for upon my soul this bird is rarer than a white crow. But those good disciplines which they call liberal have deteriorated to such an extent that by nobody are they less cultivated than by those who make a living at them. I am talking now about those who are commonly called magister, or "master," who inculcate an obscure and sophisticated reasoning in place of the seven distinguished disciplines about which they know scarcely a fraction, while at the same time they gain great wealth under the title of these same arts, although their students go out even more stupid than when they came in. Apparently it matters not at all, as long as [these same "masters"] have a title or a fine crimson gown, whether they know or do not know the arts of their profession, nor whether they differ one whit in speech, in learning, or even in manners from the most uncouth working man! As for the rest, if this poison is to insinuate itself into the separate arts and disciplines one after another, for this to be winked at in our field is tantamount to endorsement. Moreover, I regret all the more deeply that this evil has come about, and that we Phrygians, having learned too late, are so behind the times when all the other branches of study and letters are revivified, elevated and flourishing. Alas for Music, whose role is to excite the sluggish, that in our day she is herself a sluggard who has many to make sport of her but none to give her support.

But meanwhile let us return to our instruction, from which we have digressed a little. Of all the things which we have recounted above, we should remember that the consonance of the octave has seven

92. De musica, Book I, Chapter XXXIV, Freidlein, pp. 224-5. This is the concluding passage of the famous Quid sit musicus, which has been quoted and misquoted by a long line of scriptores.

species, which our contemporaries hold to be distinguished among themselves in two important respects — the varying location of the semitones and the different placement of the consonances of the perfect fifth and perfect fourth, since the octave is made up of these. That species of octave, therefore, which extends from proslambanomenos [A] to mese [a] is the hypodorian system. That which extends from hypate [B] to paramese [b] is Hypophrygian. From parhypate [C] to trite [c] is the Hypolydian and from lichanos hypaton [D] to paranete diezeugmenon [d] the Dorian. The Phrygian lies between hypate meson [E] and nete diezeugmenon [e], and the Lydian from parhypate meson [f] to trite hyperbolaeon [ff]. Finally, between lichanos meson [g] and paranete hyperbolaeon [gg] falls the Mixolydian. But since this entire span from proslambanomenos to nete hyperbolaeon is still not filled up -- for we have listed no system from mese [a] to nete hyperbolaeon [aa] -- Ptolemy set up the hypermixolydian system between these two degrees, which is in no way different from the first species and thus filled the space of the entire double octave, in order that the last note should not live alone as an exile.[93]

But of this tradition, let the diagram shown herewith serve as an example.



93. De musica, Book I, Chapter XVII, Friedlein, p. 348.

Chapter VIII

Comparison of the Modes

Among these modes, the Dorian, Phrygian and Lydian are pre-eminent, both because they have the names of the tribes — a fact which shows they were the ones most in use — and because they are more suitable for exciting the affectus or state of the soul.[94] In addition to those, called "leaders" and "authentic" — they believe that the three others, called "subjugal" and "followers" soothe rather than arouse the affectus. The one called "Mixolydian" moreover, they hold to be so-named because it mixes very easily with the Lydian, something which obtains in the case of all the modes, since they may be varied, at least in the diatonic system, by the displacement of the minor semitone. Nor do I need to mention in the meantime that this same thing may also be done by the diversity of the consonances of the fourth and fifth.[95]

It is certain that these are things which existed among the Ancients, but as to just how they adapted these tropes to stringed instruments, syllables, metric feet and dance measures, so that they now irritated and now delighted, I would consider wiser to be left for conjecture rather than presented didactically.

We see some such effect in the case of the polyphonic composers — I am speaking of the skilled ones — who now arouse a man and sometimes move him to tears, and again attract without ever satiating the spirit, nor bringing malaise to that somewhat over-delicate sense, the hearing, which is wearied in a moment.

Who does not know that this same thing happens in the case of the poets, also? For when one inwardly contemplates both phrase and thought, there are certain ones which so possess and so excite that they take the reader out of himself completely. They move him often to tears and often to laughter; they make one sometimes angry and sometimes miserable. And this, to be sure, they have been wont to achieve with multiple variety, either by the poetic meters or by the apt melody of the words, or finally by sheer genius. Therefore, I have been easily convinced of a fact which all the learned admit — that music is useful, nay I would almost say indispensable to the poet. Add the point that composers and painters have this in common with the poets, to create something original by which they may give permanent pleasure or may affect, to an astonishing degree, the very soul of a man. There is also something of this in the case of actors, although they excite and move the especially stupid and vulgar emotions. However, they perform one thing for dances, another at table. But I believe natural talent plays the largest part in this. Indeed, when one is destitute of this quality,

94. De musica, Book I, Chapter I, Friedlein, p. 186.

95. Glarean discusses this process in more detail in the Dodecachordon, terming it the commutatio modorum, or mutual interchangeability of the modes. (Dodecachordon, Book II, Chapter XI. Miller, pp. 215ff.).

no matter how much art he may exhibit, he will leave the theatre unapplauded.

I had almost forgotten to mention one item definitely pertaining to the matter — a thing which displeases me — namely, the way in which so many have rashly dared to introduce all ancient methods or to equate them with the new so that there has been nothing among the Ancients whose counterpart they do not attempt to point out today.[96] I ask for the Dorian, you sing our first mode; I seek the Mixolydian, you come out with our eighth.[97] If I desire the chromatic genus, you strike some harsh tones or other, or untuned strings.[98] Accordingly, they must be judged as small, brash souls who since they do not know anything, would fain appear to know everything.

Chapter IX

The Use of the Modes in Our Times

But now the order of things demands that we should clarify the teachings of the musicians in our own times. The church writers, making eight "tones" or "modes" like the Ancients have divided them into "odd" and "even." The odd, they call the First, Third, Fifth and Seventh; the even are the Second, Fourth, Sixth and Eighth. Once again following the manner of the Ancients, they attribute an octave species to each mode, the odd ones having, they say, the entire ambitus of the octave above the fixed scale degree which they also call the "final." The even-numbered modes, however, have only the range of the diapente, or perfect fifth, above this final tone, the diatessaron or perfect fourth lying below. They call these four fixed final degrees "keys"[99] on which any melody may properly have its ending: D sol re of the First and Second modes; E la mi of the Third and Fourth; F fa ut of the Fifth; G sol re ut of the Seventh and Eighth. It being certainly established that the uneven modes have the entire octave above the final note, take them one by one in order. The first mode has the final D; its ascent therefore is to the higher d. The final of the third mode is E; therefore, it goes up to the high e. The fifth, in the same manner, extends from F to f, and the seventh, lastly, from G to g.

The others, moreover, which are called "even," have the diatessaron below the final, the fifth above, so that the second uses for its "seat" or key-tone, the note in D in common with the first mode. These two also have in common the diapente from D to a, but the diatessaron extends down to low A. And thus the fourth mode on E finishes where the third does, and has the diapente from E to b♮ in common with it,

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96. See above, pp. 104-5.

97. Naturally, since that is what they were taught by the choirmaster!

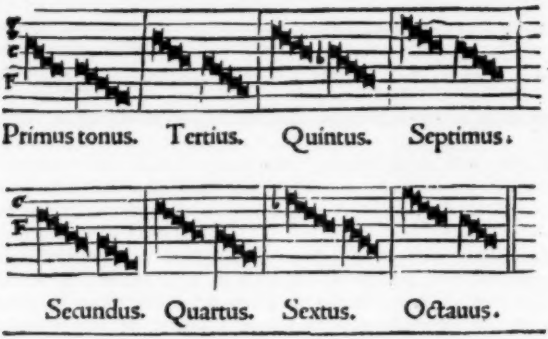
98. Evidently Glarean's boys were experimenting, too!

99. "Claves" — literally, "keys." The term "sedes" — literally, "seats," was also frequently used by the theorists.

while the diatessaron pushes on down to B. In the same way, the sixth terminates with the fifth on F, their common fifth reaching c, and the lower diatessaron going down to the low C. Lastly, the eighth pushes down to D, but the diapente, which it possesses in common with the seventh mode, touches the high d. These chants end on G, just like the seventh. They say, therefore, that these four modes are divided arithmetically[100] because the diatessaron lies below the diapente, and consequently is unsuitable for polyphony.

They say that the others, which are unevenly numbered, are harmonically divided, because they place the perfect fifth under the perfect fourth, and consequently fit naturally into the melody-line. Now, the first mode from D to d completes its diapente on a; the third, stretching from E to e, completes its diapente on b♮, and the fifth and seventh on c and d respectively. All these, moreover, have the perfect fourth placed above the perfect fifth.

We have prepared both these species for demonstration in musical notation:



But for the most part, the arrangements of our modes do not accord with the ancient tradition for the Hypermixolydian is absent, nor does our eighth seem to some of us to coincide with it in elevation, while our authorities distinguish it from our first mode because it has the diapente above the diatessaron, whereas our first mode, on the contrary, places the fourth above the fifth. But what is more astonishing is that the sixth and seventh modes have the same species of octave.[101]

100. See Boethius, De arithmetica, Book II, Chapter 53, Friedlein, p. 168f, De musica, Book II, Chapter XII, pp. 241-2, for the explanation of the arithmetical and harmonical division of the octave as taught by the Greek theorists. In ordinary musical terms, the arithmetical division of the octave gives the series I - IV - VIII (e.g. C - F - c), and the harmonical division gives the series I - V - VIII (e.g. C - G - c). The authentic modes are harmonically divided, the plagal arithmetically, as Glarean's table shows.

101. See above, pp. 104-5.

Here, then, the diligence of our musical theorists finds a double difference — one being that they have inverse systems [i.e. position of diapente and diatessaron is inverted], the other that the sixth has the synemmenon tetrachord, the seventh the diezeugmenon. Thus do our theorists deliver their judgment which, if we were not confining ourselves to writing a Primer, we might assail with good reason. But we advisedly hasten on to other things.

Chapter X

Concerning the Final, Expansion, Recognition and Mixture of the Modes

The final of all the melodies falls on re, mi or ut; however, ut may be interpreted in two ways, as ut synemmenon or ut diezeugmenon.[102] On re are the finals of the first and second modes; on mi the third and fourth; on ut synemmenon the fifth and sixth; on ut diezeugmenon the seventh and eighth. But whenever we say that a mode is concluded on a certain scale-degree, we understand that the melody is placed there. Hence, it is not necessary, if one wishes to decide to which mode it belongs, to devote too much attention to the point where the melody ends; one should rather concentrate on the octave species, as we have said above, because, as we are always pointing out, the chants are varied as to their position. For not every chant of the first and second mode ends on D, but sometimes on a or on the d above. Very frequently, in the polyphonic composers, the cadence falls on G with Bb, using the synemmenon tetrachord.[103] They do this mainly because they are constrained to keep the voices inside the range of the Guidonian scale; since the lowest voice frequently sounds with the middle octave, they find it more suitable that the voices be compressed within the scale than to be extended outside its limits. However, this advice is more a matter of prudence than of necessity, since they might also extend beyond the scale. In the church melodies, indeed, it is not necessary to transpose the chant because of one or another "ficted," i.e. chromatically altered note, which may be introduced by custom rather than by reason. In the same way, the third and fourth modes end their melodies not only on E, but also on a, so that fa occurs on Bb, although sometimes, certain ones have dared to write b♮, though these are only smatterers. For the scale-degrees both above and below are inconsistent with the systems, as one who is not ignorant of their nature readily perceives. The fifth and sixth likewise can finish their melodies, not only on F but on C or c, the systems of both remaining immobile. But some are accustomed to add certain rules for the recognition of the modes which they attribute without shame to the authorities, though tossing them off like so many crumbs. Therefore, they say, melodies of the first mode move from re to la; of the second,

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102. Ut synemmenon = ut on F with B^b in the hexachord; ut diezeugmenon = ut on C or G with B♮ in the hexachord.

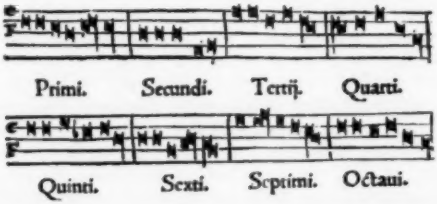
103. In other words, the composers used a g-minor triad, but the theorists as yet had no terms in which to describe it.

from re to fa; of the third, from mi to the fa which is a sixth away, i.e. to c; of the fourth, from mi to la; of the fifth, from ut to mi; and thence to sol; of the sixth, from fa to la; of the seventh, from ut to sol; of the eighth, from ut to fa.

Anyone may easily see this in the church melodies. So much for the closing formulas and recognition of the modes, in which matters experience should be considered rather than the clearly puerile teachings of so many of our musical theorists.

Concerning the question of expansion or ambitus, however, it is easy to form a judgment of their precepts, for each mode fills up the octave, albeit frequently above and below, and sometimes both, a tone is added, as may be seen in virtually all the chants. One should, however, be advised of this, that in the beginning, the melodies of the early church composers were so simple that sometimes they scarcely filled up the perfect fifth in their rise and fall, to which custom the Ambrosians most nearly conformed. Then little by little they began to be more widely extended, and to luxuriate in sounds, so that later, not contented with the octave, they sometimes added the fourth and even the fifth to the diapason, so that sometimes the systems of two modes are brought into play intermingled, in a single melodic line, and sometimes even went beyond that, a practice which most people protest as undue license. We see many examples of this sort in the sequences, as they call them.[104]

According to this plan, Pierre de la Rue, a most distinguished contemporary polyphonist, has combined in beautiful fashion the seventh and eighth modes in a single melody. Also the highly skilled Jacobus Obrecht has done the same thing with the first and second. Whenever, this happens, the modes are said to be mixed, as anybody will easily see who has mastered the octave species. But though these melodies are free from the rule, they can be learned by a good musician as well as the regular ones, for it is simply a matter of singing a given melody well or badly.

But enough of this for the present. Now let us set down the formulas of the modes with which they conclude the psalm-tones themselves, a thing which we have done more than we should, being the slaves of our times. There are in common use, however, the following:

104. Cf., Dodecachordon, Book I, Chapter XIV, p. 34, Miller, p. 112.

I
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum,
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
II
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
III
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
IIII
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
V
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
VI
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
VII
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.
VIII
Dixit dñs dño meo, ſede a dextris meis. Credidi ꝓpter qđ locutus ſum.
Magnificat anima mea dominum. Benedictus dominus deus iſrael.

Nor does it greatly concern me that many are accustomed to spread abroad a variety of different endings which some individuals or other — I know not who — have concocted with more industry than care. However, this can be as you choose, since the formulas of the modes are different in different nations. There are as many differentiae as there are temperamental singers, and whoever desires to write precepts to please them may as well set out to harness foxes and milk he-goats. But the intonations of the modes are varied, not only in the different regions, but also in one region, nay, sometimes in the self-same place of worship it differs according to books and customs.

Nevertheless, I wish to present here the usual forms [see p. 137].

However, I am not satisfied simply to memorize the forms of the verses in the ecclesiastical chants which they call the Introit, Tractus, Alleluia and Responses, nor that so much should be left to usage. And for this reason, if anyone wishes to possess these things completely, he should not expect it here from me, but go and seek help in this from others. I believe that I have contributed my share as long as I may feel that this work, which I have made as compact as possible for such a work to be, may bring some pleasure to the studious.

A Lay by this same Glarean in Praise of Music and the Cithara

I have rejoiced to play charming strains on the resounding cithara,
And on the singing strings of the clear-toned lyre.
Which lifts up its hymniferous head with turned-back horns,
As one may often see the tame goats rise in play.
The querulous neck moans under the ivory key,
And a thousand departed spirits of sweet song still linger in the frame.
I marvel at thy thunder, and at thy equal covenants of peace,
Wherein both high and low concord through intercession of the mean.
Beneath the touch, it murmurs in the deep;
The highest note in answer speaks, though lightly.
Yet that last symphony from trembling strings
Would soothe thy fevered jaws, oh savage Cerberus!
And thee, oh sacred poet and divine — David,
Thou rarest glory of the plaintive lyre —
Shall I pass over now?
Thy gifts are greater than Dalmatian gold,
And better than thine incense-burning hearths
Oh slothful Sabean.
The tale is told that lions were led by the Orphean cithara,
And stones cleft by the sound of the chelys.
The cunning chelys in thy shadowy kingdom soothed thee, Pluto,
Impelling thee to render back Eurydice.
Oh for what song should I remember thee, sweet Arion
To whose pulsing melody the monsters of the deep rushed forth.
Thamyris contended with the Muses,
And Marsyas with Apollo,
And the sounds contend in order with the numbers.
Let tuneful Iopas live — how pleasing is his melody! —
And with Terpander the Timothean lyre.
On the strindent barbytas of the Centaur Chiron
Never shall songs be lacking in praise of the Dircaean seer.
This boon revered, this gift, our ancient blessing received from realms above,
Thou too hast given us, oh Phoebus!
And I believe the cithara itself has glided down the luminous arch of heaven to our hands.
Wherefore, I deem that nothing is more lovely than its strains.

THEORY FORUM

RE: ANALYSIS AND UNITY

By William H. Reynolds

What kinds of musical analysis are possible, desirable, and practical for the elementary harmony student? This question was discussed at length from a rather negative point of view in the article, "Analysis and Elementary Harmony," in the Journal of Music Theory, (II:240-49). Offered in response to my article, "Unity in Music," in the previous issue of the Journal[1] this article expresses concern about the problems and dangers involved with the introduction of concepts which are too complex or too subtle for the elementary student to grasp. Although apparently not opposing a more general and unified approach to musical analysis, Mr. Gettel's article offers few constructive suggestions toward this end.

The article quixotically ascribes ideas or aims which had not been intended in my original article and then proceeds to criticize for its failure to support these points. The article criticizes my original statement because, while it was intended to suggest approaches toward unity in analysis, there was not a greater attempt to point out underlying interrelationships among details brought out in examples. While the article criticizes what it considers to be the avoidance of penetration in specific directions, it does a complete about-face to say (p. 249) what is obvious, that the "contemplation of so much richness and flexibility of material... may merely clutter and confuse" the student's musical experience. With this latter point the article has, apparently unknowingly, bypassed one of the main premises of my original article: the desirability of presenting general analysis in terms of concepts which the basic student can begin to use at the outset, and upon which he can build steadily toward a maturely unified analysis.

Mr. Gettel's article raises several specific problems which must be commented upon. A great deal of space is spent discussing "strong" and "weak" as applied to harmonic progressions. The article in fact confuses the term "progression" with the use of "certain chords (or even certain kinds of chords)," in its discussion of the problem on p. 243. To be quite basic, since the article requests it, harmonic progression involves root movement and a certain degree of contrast in sound. It is not uncommon to classify progressions in terms of the interval by which the root has moved and the degree of contrast afforded by the root movement. In this way, the dominant-tonic progression, the strongest[2] progression available, is seen to be a progression in which the root moves up a fourth (or down a fifth). Similarly, I-IV, II-V, III-VI are all progressions involving root movement up a fourth (or down a fifth). In addition to the close circle-of-fifths relationship of

1. Volume II, No. 1, pp. 97-104.
2. W. Piston, Harmony, p. 141. See also p. 48.

root movement up or down a fourth or fifth, such progressions afford a great deal of contrast, the two chords having only one tone in common and the roots of the chords separated by a wide interval. Contrast then is equated to strength, and the lack of contrast is equated to weakness?[3]

Intending to disprove any correlation between harmonic strength and metrical accent, the article refers to the chorale, Ich bin ja, Herr, in deiner Macht. On p. 243 the article states "each of the 20 metric accents is marked by a chord change," but that "sixteen essentially different progressions are involved." One actually finds that, of the twenty accents, twelve involve root movement up-a-fourth, and the remainder are either root movement down-a-fourth, or root movement by second (all providing ample contrast for harmonic accentuation, and thus all "strong" progressions).

By similar analysis of the other chorale discussed at length in the article (Du Friedensfürst), one finds that out of sixteen possible metrical accents, ten involve root movement up-a-fourth. From this it is impossible to agree with the article when it says (p. 243) that "any distinction in relative strength is specious."

On the same general subject the article cites three examples to confirm the statement (p. 243), "not all metric accents are marked by a change of chord." No one could disagree with this statement, but it is difficult to see how this is an argument against a correlation between metric and harmonic strength. However, the examples do deserve amplified comment. In each case a rapid tempo is involved, so that the slower harmonic rhythm is not disproportionate. The unit of the measure can easily be replaced, as it often is in rapid tempo, by the unit of a two- or four-measure phrase (as far as the harmonic rhythm is concerned). This is precisely the case in two of the examples: the first eight measures of the Menuetto of Haydn's Symphony No. 94, and the E-flat-minor theme in the first movement of Beethoven's Sonata No. 8. Moreover, in the Haydn symphony, the slower (two-measure) unit gives way to a harmonic change on each metrical accent after the first eight measures. The third example, Bach's two-part Invention in F, provides a very active contrapuntal movement which changes character measure-by-measure, a process which supplies something very nearly equivalent to chord change. Without wishing to haggle, these examples would seem to provide the kind of exceptions which confirm, rather than deny, the coordination of metric and harmonic strength.

There also exists in the article confusion between "syncopated" harmonic rhythm and anticipatory harmonic rhythm, the latter being the repetition of a chord across a bar-line, where the first of the two chords is the anacrusis to the phrase. A syncopation serves to shift the bar-line, while an anticipation serves to accentuate it. Among the chorale harmonizations cited in the article as examples of harmonic rhythm that is syncopated, the anacrusis to measure 5 in Du Friedensfürst is anticipatory rather than syncopated. Similarly, Dir, dir, Jehova and Herr Gott, dich loben alle wir both begin with an anticipa-

3. R. Sessions, Harmonic Practice, p. 83.

tory chord, rather than a syncopation. Nun lob', mein' Seel', den Herren, in the version of Ex. C, comes much closer to illustrating syncopated harmonic rhythm. However, the effect of syncopation is at least partially contradicted by the double passing-tones on D and F, sounding together with the G in the melody, which serve to inject a feeling of chord-change to dominant between the root-position tonic and the first-inversion tonic which follows across the bar-line.

The article speaks vigorously against the use of generalizations, but in turn bases its most lengthy analysis on a generalization which in its own terms is purely "arbitrary." "It is sometimes conveneint simply to apply an arbitrary formula evenly throughout the piece... For chorales in quadruple meter it frequently is effective to assume that a structure in half-notes will permit as deep a probing...as necessary," (p. 246). Why this is so is not made clear.

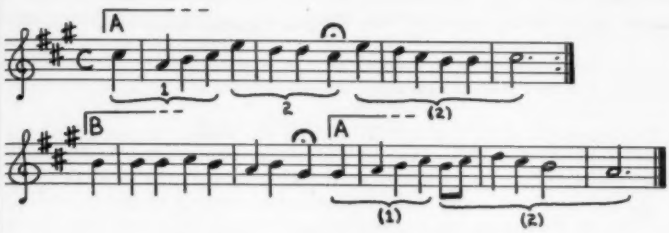
Such an assumption would require the more significant functional aspects to fall on the accented portions of the measure. This would assume the exclusive use of passing and auxiliary non-harmonic elements, and would deny the function of such accented non-harmonic processes as the appoggiatura and the suspension.

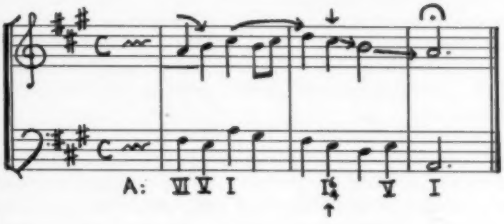
In examining the reduction-analysis provided in Ex. D, p. 247, by the application of this arbitrarily generalized principle, one wonders what significant information has been made available by this kind of reduction. Perhaps it is that the background contour resembles that of the foreground. If any significant contribution is to be made by reduction, it seems logical to expect it to provide information not already obvious. A rudimentary analysis of the unreduced melody produces a structure typical of many chorales (see Ex. 1, p. 143). This agrees with the deductions from the analysis (Ex. D) discussed on p. 246, but this is not new information. It is also true that the bass provides "organic and contrapuntal support" in any Bach chorale harmonization. Without questioning the utility or validity of such analysis, one is disappointed at least that the information thus uncovered is not more helpful in understanding the chorale in question.

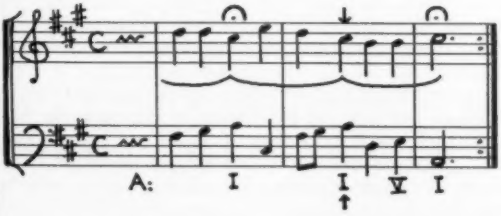
This analysis was offered for comparison with the analysis of the same chorale in my original article, in which structural support of the basic melodic linear movement was suggested. Mr. Gettel's article seeks to discount the principle of melodic support by root position harmony, by indicating that the cadence in mm. 3 and 4 is the same as the final cadence of the piece. The article then suggests that if the root-position tonic on the second beat of m. 3 were structurally significant, then a root-position tonic (rather than the tonic six-four) would also have been used in the comparable place in m. 8 (See ex. 2, p. 143).

It can be seen that the two cadences are not the same. The former has a melodic emphasis on C#, and ends on C#, while in the latter case the line is moving from the C# downward, through the B to the A, to achieve a perfect authentic cadence, ending the chorale. The use of the tonic six-four at this crucial point gives the line an unstable harmonic support which encourages a downward gravitation, away from

Example 1.

Melody of the Bach chorale, Du Friedensfürst, Herr Jesu Christ.

Example 2.

Final cadence (mm. 7-9) of Du Friedensfürst.

Compare with mm. 2-4:



the C# toward the final A.

In referring on p. 247 to other harmonizations of this same chorale, Mr. Gettel seems aware that there is not a single "best" harmonization of any given melody, but at the same time he seems to ignore the fact that two different harmonizations of the same melody will involve many different implications and exploitations of unity. Music is a creation of dynamic equilibrium among a great many forces: horizontal, vertical, temporal and rhythmic. That there can be no predictable supremacy (or "higher value," as claimed on p. 248) of one force over another is inherent in the very nature of art.

The purpose of my analysis was in no sense to determine the composer's intent (as is implied on p. 248), but was rather to point out coincidences of technical details which undeniably are present, and which do produce an observable effect in the sound of the music. It suffices to say that in Du Friedensfürst the use of root-position chords in coincidence with the basic melodic line does exist, and the function of line and the stability of root position triads cannot be denied.

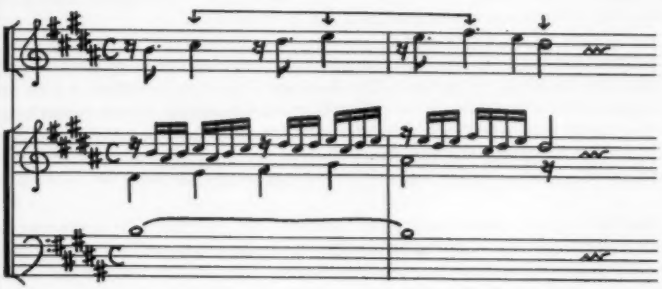
Mr. Gettel's article also objects to the generalization in my original article, "satisfactory melodic movement in almost all cases reduces itself to a basic stepwise line," by stating on p. 240 that "many melodies involve disjunct skeletal lines." There seems to be a disagreement regarding the terms "disjunct" and "line," since melodic linear movement generally involves stepwise relationships to create line. Perhaps a more precise terminology would have been disjunct melodic movement (not line) since, for example, the arpeggiation of a triad does not, of itself, create a melodic line. Instead, it represents a horizontalization of harmony.

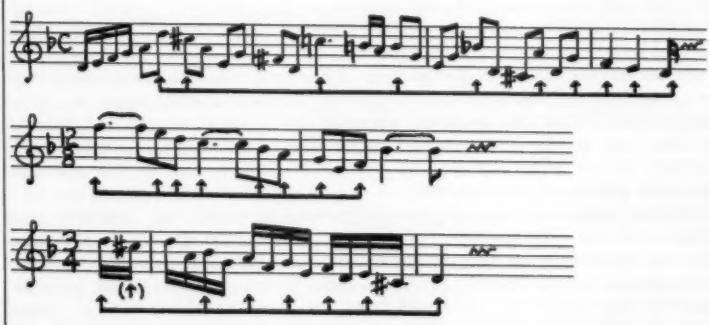
On p. 240 Mr. Gettel questions the purpose of melodic reductions which had been included to illustrate the process in my original article. Such a question could be asked of any aspect of analysis, even analysis itself, for reduction is a synonym for analysis. A complete answer would be a lengthy task and will not be undertaken here. The question would seem to deny any value in the ability to formulate a valid description of a melody which is as rational and unique as the basic linear contour of the melody. Such a shortsighted denial is indefensible.

In an endeavor to infuse meaning into melodic reduction, the article explores, in Ex. A, p. 241, one possible interrelationship between melodic reduction and harmony. The "significant correlations" brought out by the example are at the very least debatable. For instance, the disclosure of a tonic prolongation is not remarkable — the presence of the tonic pedal throughout the example makes this immediately most clear. The article states that the removal of the sixteenth-note foreground "yields a stepwise line of quarter- and half-notes." This is not correct. More exactly, the rhythm of the line is made clear in Ex. 3, p. 145.

Instead of emphasizing the outline of a tonic triad, as indicated in the article, the sixteenth-note rests in effect serve to de-emphasize

Example 3.

Mm. 1 and 2, Prelude XXIII, WTC I.

Example 4.

Opening themes of each movement of Bach's Concerto for 2 Violins.

the coincidental scalewise tonic import and provide greater emphasis on the non-tonic elements in the line. This reinforces the dissonantal aspect of the pedal and serves to underscore the satiating effect of the ultimate resolution on D#, which is the only really tonic element to arrive on the beat proper.

In addition to the above, melodic analysis through reduction is valuable in that it suggests to students the means by which more simple melodic structures may be elaborated to become relatively intricate forms. It gives a positive, analytical approach to the consideration of melody and for the beginning student stimulates an awareness of the linear aspect of melody. It should not be based on "arbitrary" systems or concepts, but on more meaningful aural evidence.

Reduction to basic melodic lines may make apparent many otherwise obscure aspects of unity. For example, it may provide a clue to more subtle relationships between different thematic ideas occurring within the same composition. The themes from each of the three movements of Bach's Concerto for two Violins in D minor (Ex. 4, p. 145) each elaborate a structural line which descends an octave.

Another point deserving comment is Mr. Gettel's disagreement with a statement from my article that the whole question of rhythm "'deserves less definition' for the student of harmony than for the student of composition." In justifying the disagreement, the article states, "the composer's impulsiveness, intuition, and inventiveness need be expressed only in music," precipitously equating the student of composition with the composer. This apparently assumes that in harmony one must make rational analysis of music, but when one studies composing such rational study should be discontinued. It seems more reasonable to expect progress along these lines toward more intricate and elusive problems, problems about which it is indeed difficult to verbalize meaningfully and accurately, as is the case with the problem of rhythm, and the larger problem of unity itself.

In my original article a constructive approach was suggested which would deal with musical analysis with an ultimate goal of a unified view of music, not merely that of conventional harmonic analysis. It was thereby intended that the beginning student could, from an early point in his theoretical studies, develop the ability to hear and thus to describe such phenomenon as the basic linear movement of a melody; to be aware of the rhythmic and harmonic context set up within specific works; to approach in a gradual way an awareness of some of the implications generated by unique harmonic, intervallic, melodic and rhythmic ideas. My article sought to demonstrate approaches which, while not expecting the student to determine profound underlying interrelationships among these various details (a process requiring greater maturity than could be expected from the student of harmony), would enable him to develop a gradual awareness which could lead him from the outset of his studies toward this goal.

Experience shows that the harmony student can hear the basic direction of a melodic line, can hear thematic repetition and variation,

can hear motivic derivations and similar relationships, can hear harmonic as well as metrical strength, can even hear specific exploitation of intervals. It seems wrong, then, to postpone general analysis to some more advanced course in form and analysis, when general analysis ought to be the important cornerstone of all musical study, historical and theoretical.

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RE: INDIRECT CHROMATICISM IN THE RENAISSANCE

By John Clough

In an earlier article (Journal of Music Theory, I:2-21) it was shown that direct chromaticism in late baroque music is limited to a set of ten harmonic progressions having common characteristics. Examples of direct chromaticism in the late Renaissance were considered in their relationship to the baroque set in an attempt to show precisely which usages were peculiar to the Renaissance. The extension of this operation to indirect chromaticism is the subject of the present exposition.

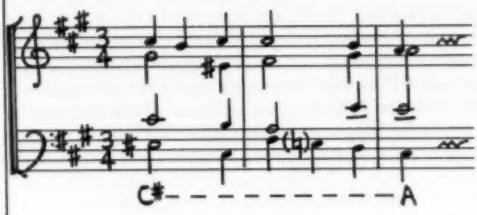
In many passages of renaissance music the direct chromaticisms are within the limits of baroque practice, but the flavor of the entire passage is unmistakably renaissance. Here the explanation lies in the nature of the indirect chromaticism. An exact historical measuring device for indirect chromaticism does not suggest itself as it did for direct chromaticism, but from our knowledge of the latter phenomenon a reliable indicator may be fashioned that will enable us to understand reasonably passages whose indirect chromaticism is the only objective guide to their historical orientation.

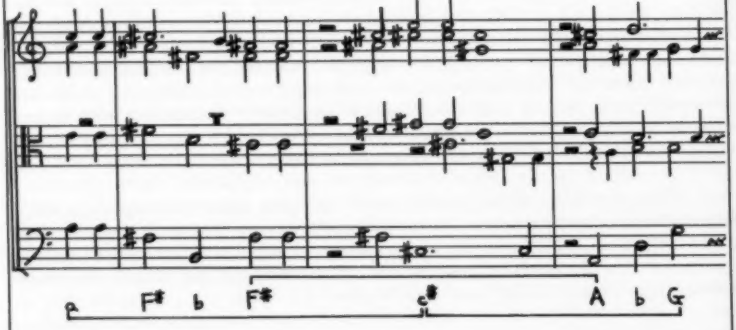
To begin with, chromaticisms which are not used in the "direct" manner in the Baroque often appear as indirect chromaticisms in that period. In Ex. 1, p. 148, the indicated indirect chromaticism does not in the least suggest a renaissance flavor. Single, isolated, instances of this sort are common in the Baroque, as well as the Renaissance. But passages containing several connected or overlapping indirect chromaticisms which could not occur as direct chromaticisms in the Baroque are peculiar to the Renaissance even though their use of direct chromaticism is limited to the baroque set of chromaticisms.

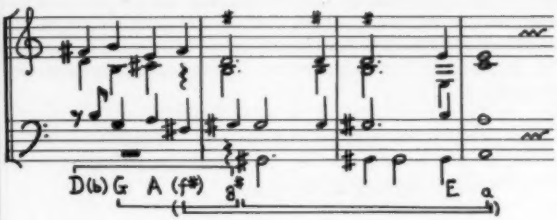
Given in Exx. 2-5, pp. 148 and 149, are four passages of this description. Beneath each is its root progression and an indication (by brackets) of the indirect chromaticisms whose "direct" counterparts are found only in the Renaissance. In each example the direct chromaticisms are members of the baroque set.

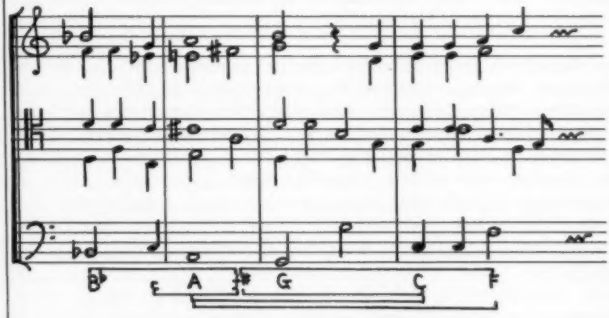
Ex. 2 shows a simple connection and overlap. In the next two examples the indicated chromaticisms lean more heavily upon single triads (g# and f#, respectively) than in the Gesualdo excerpt. Also responsible for a more predominately renaissance quality in these two passages is the fact that fewer chords are non-members of the indi-

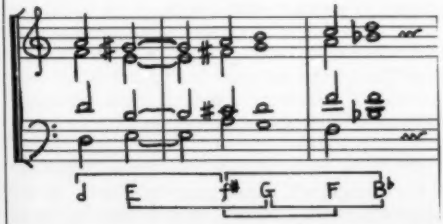
Example 1.

Bach: Nun lob', mein Seel', den Herren

Example 2.

Gesualdo: Itene o miei sospiri

Example 3.

de Rore: Schiet arbuscel di cui ramo

Example 4.

Marenzio: O voi che sospirate

Example 5.

de Rore: Datemi pace

cated progressions.

Finally, we give Ex. 5 in which every chord is involved in one or more of the bracketed progressions.

To summarize: A study of the above renaissance excerpts reveals that all direct chromaticisms are within the limits of baroque practice. However, the excerpts contain many chromaticisms of the "indirect" variety whose "direct" analogues are foreign to baroque practice, and it is this fact which accounts for a harmonic quality peculiar to the Renaissance.

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RE: THE EASTMAN SIGHT-SINGING MANUAL

By William Hoskins

When Vol. II, No. 2 of the Journal of Music Theory reached my desk, I turned first of all to the "Theory Forum," to find out how many writers had sprung to the defense of the Eastman Sight-Singing Manual. It rapidly became apparent that the heavy ammunition was being expended on targets other than the review, by Asher Zlotnik, which appeared on pp. 116-18 of Vol. II, No. 1.

This is a pity; I have seldom seen so much explodable dogma lying about in such a small number of paragraphs. In the discussion below, I have given this dogma the ALL-CAPITALS appearance it deserves, with my rebuttal thereafter in more modest lower-case.

> THE STUDY OF SIGHT-SINGING SHOULD HAVE AS ITS PRIMARY PURPOSE DEVELOPING THE STUDENT INTO A VIRTUOSO SINGER OF ANY SINGLE-LINED MUSIC REGARDLESS OF THE QUALITY OF HIS VOCAL EQUIPMENT.

According to which chapter of whose Bible? Why a virtuoso singer? Why any single-lined music? (Italics mine.) Some instrumental parts contain inherently unsingable skips and impossibly bravura passages; who would benefit from singing these? Why should not the study of sight-singing have, as its primary purpose, the biggest possible improvement (within the span of four years of collegiate study) of a given student's sight-singing equipment? More on this later.

> SUCH SKILL, IF IT IS TO HAVE ANY VALIDITY, MUST OF COURSE BE MEASURED AGAINST THE HIGHEST ACHIEVEMENT OF THIS ART AS PRACTICED BY OUR FINEST PROFESSIONAL MUSICIANS.

Why has the skill no validity until it is equal to that of the world's best? Which professional musicians? Singers? Instrumentalists? If the latter, what about pianists and organists? Some of the best of these are reputed to be strikingly ungifted with sight-singing ability — has

Mr. Zlotnik checked his musician friends in this respect?

Further: Under what circumstances do our "finest professional musicians," demonstrate their sight-reading, let alone sight-singing ability? Certainly not on the concert stage. Where, then? In the classroom? How many of our "finest professional musicians" are to be found there? In the private studio? How often, in private lessons, is sight-singing called for on the part of the teacher? In short: how does Mr. Zlotnik know what sort of sight-singing skills our "finest professional musicians" possess?

> THE SIGHT-READER MUST ACQUIRE SUFFICIENT FACILITY TO ARRIVE AT A CONCEPTION OF THE MUSIC, THROUGH SINGING, WITH ACCURACY AND WITHOUT THE SLIGHTEST HESITATION. ANYTHING THAT INTERFERES WITH THIS STANDARD INTERFERES WITH THE ULTIMATE MUSICAL CONCEPTION.

After making more than a few allowances for semantic misapprehension, I still find that this passage seems to say that if you cannot sing it perfectly at sight, the first time, you will never succeed in performing it in the best possible manner, no matter how many years you work, and no matter whether "it" is a piece for voice, or clarinet, or quarter-tone piano.

But — at least, among the musicians I have known — some of the best performers are almost impossibly bad sight-readers, who depend on long and repeated contact with the score to bring the music home to them, taking it stubbornly unto themselves in countless repetitions until it dwells within them complete from first note to last. Why set such a high value on sight-reading, which is so patently an auxiliary skill in terms of the performer's ultimate aim — the finished performance?

> IN THE STUDY OF RHYTHM, THE AUTHORS START WITH THE ASSUMPTION THAT THE STUDENT UNDERSTANDS [certain fundamentals]... FOR THOSE WHO ARE NOT FULLY INFORMED IN THIS AREA, SO MUCH UNEXPLAINED MATERIAL IS MORE LIKELY TO CREATE DISCOURAGEMENT THAN CURIOSITY.

True, if the book had been called Complete Home-Study Method of Sight-Singing. But it is a manual for classroom use, and in that classroom, at least most of the time, there should be a teacher, whose job it may be, among other things, to answer questions and prevent discouragement, as well as to check on the progress of the students. It is hard to conceive of any subject more difficult to transmit via the printed page alone than sight-singing. In this subject, any manual, no matter how well designed and arranged, no matter how voluble in verbal explanation, can be nothing more than a useful adjunct to the teacher's efforts.

> IN VOCAL MUSIC, DIVORCING THE TEXT FROM THE MUSIC IS A QUESTIONABLE PROCEDURE.

Granted—but only outside the context of a sight-singing manual which is to be used for study purposes and not as a handy reference book for folk-song performances.

In the criticism of the rhythmic syllables which follows in the review, too long to be quoted here, Mr. Zlotnik's objections are well-taken, as he almost admits, only if the activities of the teacher (which at appropriate moments may include time-beating and counting aloud for the benefit of practicing students) are left out of account. If Mr. Zlotnik's proposal that we should call each rhythm by a different name is carried to its logical conclusion, what about count one? Obviously this is a different count in bar two than it was in bar one.

We use the rhythmic reciting-syllables (which we do only occasionally) as a crutch, to help students over a momentary rhythmic difficulty. In the same way we use numbers, letter-names, or solfeggio syllables to help the students over a momentary melodic difficulty. In both cases, the syllables should be used only if they seem to help the students in performing the passage being practiced; and, for such "in-and-out" use, the simpler the system employed, the better. In the example from p. 7 of the Eastman manual, the silent count two, established by a single bar of counting before the example is begun, is all that is necessary to differentiate from . And as long as the teacher indicates the beat when discussing the examples, no confusion will arise among the students. As to the duple-versus-triple problem of "one-two" contrasted with "one-two-three," the teacher will emphasize a few bars by counting "one..... one..... one....." before filling this marked-off time interval, first with a duplet, then with a triplet (or vice versa). The question of whether a triplet represents, or does not represent, a complete triple-meter bar, is simply not relevant; the point is to learn how to perform a triplet in the space usually occupied by a duplet.

As to Mr. Zlotnik's method of "testing" the rhythmic reciting syllables by asking a group of "very competent instrumentalists" to sing various examples without, and with, the syllables, that is simply no test at all, because the musicians in question could, according to Mr. Zlotnik, sing these examples "FLAWLESSLY" without the aid of the reciting syllables — therefore, he deduces, the syllables are of no use. Without running the "crutch" metaphor into the ground, we should point out that it holds up very well in this case (both puns are intentional). Any group of able-bodied professional runners, given crutches and told to use them, would certainly report that they could run much faster without the "help" of their crutch; nevertheless, some people still find crutches necessary! And it is also good practice to discard the crutch as soon as possible, no matter how necessary it was at first.

> WHEN ONE CAN SING ANY VOCAL OR INSTRUMENTAL LINE AGAINST HARMONIC RESISTANCE, HE IS DEALING WITH THE REAL APPLICATION OF SIGHT-SINGING.

Why limit this principle to harmonic resistance? Ring in the percus-

sion at full blast, or the siren used by Varese. Or hold the class in some of our less progressive factories.

I will risk a generalization of my own, recognizing that it is not absolutely and everywhere true: in by far the greater number of cases, even if only contemporary music is chosen for experiment, it will be found that the presence of additional lines serves as an aid, not a deterrent, in the singing of one's own line. I find this true, for instance, in the example contrived by Mr. Zlotnik to prove the contrary (top of page 118), since I can "match pitches" with one note in his chord in each case. And why stifle the student's aural imagination in such examples by allowing him to see only his own line?

Though I wish it were true that every one of our budding musicians needs to be trained in the sight-singing of contemporary music, we must admit that some of them will become specialists in Vivaldi or Verdi, Mozart or Massenet, and these will find it overwhelmingly true that the full context of the music helps, rather than hinders, their sight-singing endeavors.

The study of sight-singing should have, as its primary purpose, the development of the student's musicianship through the closest possible contact with the musical materials; this development must, in all cases, be begun from whatever point the student has reached on entering college; it must be carried on as assiduously as the available time and curriculum permit; it must be carried on under the auspices of a skilled teacher who can both guide the process and check on the progress; in this development, a collection such as the Eastman Sight-Singing Manual is of very real assistance, though there is no admissable reason for not supplementing it with other collections and with exercises in sight-performance of three-voice and four-voice vocal scores. But, in the long run, it had better be recognized that the skill thus developed is at best of secondary importance, and that many a good musician may prove his worth on the concert stage, in the orchestra, or on the podium, while still lamentably deficient as a singer-at-sight. One can suspect that the less there is of such deficiency, the greater the musicianship — but there have been some noteworthy exceptions who were, and are, to be numbered among "our finest professional musicians."

One undesirable feature of the Manual has been retained in the revised version — the erratic spacing of the notes in many of the examples. In some cases, but by no means all, this might be attributed to an attempt to compress the example to the Procrustes bed of a single line. But while they were overhauling the book, the editors might well have repaired such misleading measures as the first one of Ex. 48, p. 16, in which two eighth-notes of a 3/8 bar actually take up less space than the following two sixteenths; or bar 3 of Ex. 54, p. 17, where two quarters are allotted exactly the same share of the 4/4 bar as each succeeding pair of eighths. Spacing errors such as these give rise to a great deal of unhappy discussion in class; when the book receives its next overhaul, I hope they can be corrected. A mathematically precise division of the bar is of course not necessary, but discrepancies

in proportion such as those noted above should certainly be kept out of sight of students whose tendency is all too frequently to commit the same sort of error in their own writing.

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RE: THEME AND VARIATIONS

By Robert Kelly

Mr. William Thomson's seemingly careful review of the new composition textbook Theme and Variations in the November, 1958 issue, p. 258, cannot be passed by without comment. Some criticisms are very thorough and enlightening. Other criticisms, however, are meant to be derogatory, and actually present only one side of the issues involved. For example: "The compositional process illustrated in the 'free' interludes and the finale, as well as the more didactic examples, does not differ fundamentally from late medieval or early renaissance technique"; and "patches of hymn-like triads move along in chromatic vagueness, ending, at times, with solid authentic or plagal cadences"; also, his comparison of the intervallic relationship (rule 45, p. 26) of three or more notes with each other to "16th-century style." This points out that the book has its roots in traditional practices. What is so harmful about traditional influences in contemporary music? We have Hindemith's creative interest in baroque music and Stravinsky's creative interest in renaissance music, to mention two composers looking to the past for ideas.

Mr. Thomson is not willing to accept the "wedding in this book of the duodecuple bias with more or less traditional harmonic-melodic concepts." He has the belief that some of the followers of Schoenbergism share — that the twelve-tone technique should be free of traditional influences and be an entity to itself, as pure and untainted by tonalism and past influences as possible. The most important fact that Mr. Thomson misses is that this book is not a book on twelve-tone technique as accepted by the "purists," but is the beginning of compositional techniques using the row in a primitive state. The important thing is not the treatment of the twelve-tone system, but the discipline of traditional practices in contemporary music. This approach to creative writing is beneficial not only to the young composer but to the non-composer who wishes to create within his limited talents. There is no mention any place in the Journal of Music Theory, nor in Mr. Thomson's review, of the subtitle of this book. It is "A Study of Linear Twelve-Tone Composition." This subtitle should clarify in the reviewer's mind that Theme and Variations is not a treatise on the many aspects of twelve-tone technique. A more careful reading of the Introduction of the book would also point this out. Mr. Thomson has used this review to exploit his own views on the controversial issue of the "purists" versus the "traditionalists."

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BOOK REVIEWS

Edited by
Donald Loach

DIE REIHE, a periodical devoted to developments in contemporary music. Edited by Herbert Eimert and Karlheinz Stockhausen. Theodore Presser Company, Bryn Mawr, Penna. in association with Universal Edition, London, Vienna and Zürich, 1958, Vol. I - $2.50, Vol. II - $3.00.

Vol. I: Electronic Music.

The subtitle of Die Reihe might, in the interest of veracity, be amended to read "a periodical devoted to some (or certain) developments in contemporary music." The fact that it does not, however, gives us a very good clue to the aesthetic standpoint which Die Reihe represents. For this publication "contemporary music" is synonymous with serial music and the like. The original German subtitle, "Information über serialle Musik," is much more forthright and illuminating. In this point as in a good many others we take issue with the English equivalents and/or translations of the original language.

The contributors to the first volume of this irregularly-appearing periodical (four issues have come out in German) are all serially-minded. They include a number of the most active composers of electronic music (Stockhausen, Goeyvaerts, Pousseur, König, Gredinger and Eimert), others who have written electronic music but whose main activity is still in the realm of "traditional" music, albeit in an "advanced" idiom (Klebe, Boulez and Krenek) and two theorists who support the more "advanced" trends (Meyer-Eppler and Stuckenschmidt). (We use quotation marks for the word "advanced" because there is still no proof that this so-called advance constitutes an advance.)

For anyone seeking information about the latest developments in "advanced" serial composition and theory, Die Reihe is very welcome indeed. This is not to say, however, that the text is intelligible to the average musician possessed of such curiosity. Even with repeated readings, there are many passages that refuse to reveal their content. A fair sample might be the following, from Pousseur's article "Formal Elements in a New Compositional Material": "One thing, however, is certain: as long as partials are heard as individual frequencies they can have no effect on the timbre. Timbres of frequencies are completely swallowed up by the principal frequency and are subordinated to it. They effect the inner structure, the detailed form of the, in its turn subordinated, periodicity, which is determined by the accoustically verified pitch levels. They may be taken as statistic phenomena, a kind of source of probabilities; their density is determined by secondary oscillations, by the smaller or greater degree of complexity in their internal proportions and by the degree of inequality between them. This attitude nearly coincides with aural experience. It would be seen

to what extent the sound and the invention of the timbre are affected by those supposedly subjective qualities, which have been so richly described. Will not the characteristic quality of the sound depend on the nature of its secondary accompanying partials? Is not the whole basically unaltered and regular in character, even if the smallest units within it are varied? We hear a fixed, linear pitch level; this exactly contradicts our intuitive idea, for we imagine a much higher and more general degree of transformation. We see the search for ways of breaking this regularity, even to the microscopic details which go to make up the frequency of the sound phenomenon as the principal task of our generation, starting as it does from the apex of Webern's work."

Die Reihe is written in a mixture of musico-technical, pseudo-philosophic, aesthetic and acoustical considerations and language that is intelligible only to the "initiated" (who don't agree among themselves, either) or perhaps only to the authors themselves. For the trained, even highly-trained, musician, there are whole sections of Die Reihe that convey little or nothing. Perhaps, one may object, one must also have a profound knowledge of physics and mathematics. This question we prefer to leave open and to quote only the opinion of one trained physicist to the effect that the physics here advanced is on a most elementary level and frequently incorrect.

It must be granted that the Englisch (the "c" is not a typographical error) in which the majority of articles are couched contributes handsomely to the non-intelligibility of the full, rich prose. Pousseur's article is anything but crystal clear in the original German, but it is at least 50% less obfuscating. Passages such as the one quoted above are unfortunately fairly frequent throughout the book. They supply, to be sure, a highly welcome element of comic relief (however unwittingly) in an otherwise deathly serious work, but they also render obscurity the more obscure. We don't know quite what to make of the "problems of a synthesis between electronic and illustrumental dimensions," for instance. "Instrumental" is clearly meant. And Gredinger's statement that in the world of painting "the serial idea is the youngest and has hardly yet taken route" makes a good deal more sense if the last word is spelled "root." In Boulez' article we are amused but not enlightened to read: "Despite this felicitous point of contact, it cannot nevertheless be agreed that it results entirely from a mature development; reciprocal contact has burdened the musical mind with questions which have hardly been formulated, while the technician is faced with a number of unusual problems which he must solve in order to 'realize! We have mentioned above a real disturbance of the limits imposed on the creative artist; one of the foremost problems of this transformation consists of the fact that for the first time the musician has to deal with the idea of continuity."

The last sentence is typical of an attitude that runs through the whole of Die Reihe, namely, that the art of music has been completely boulversée by the discovery of electronic music; that this is it, and that the nearly 2000 years of Western musical history are little more than stepping-stones to this music of the future. Eimert states that "only in coming to electronic music can we talk of a real musical con-

trol of Nature!" Stuckenschmidt echoes these sentiments, in that we now "have before us an art, totally controlled by the spirit of man, in a way not previously imaginable!" Boulez is of the opinion that in electronic music "orchestration no longer has only the decorative function which was attributed to it in the 19th Century. The way it is organized imbues it with a significance which it has never known before!" Pousseur: "But, today, noise is formulated creatively and so gives rise to entirely new, unknown, aspects of conscious hearing!" (N.B. Punctuation, capitalization, etc., are the idea of the translator, not of the reviewer!)

And so on. The entire book expresses the curiously 19th-century idea of progress in art, sometimes in unbecomingly arrogant terms. Strictly technical matters alternate with flights of polemic such as Boulez' condemnation of "all those specialists in hybrid, sexless, electronic paraphernalia who never really concern themselves with the real condition of timbre in the artificial sphere!"

It goes without saying that the universally-admitted starting point for electronic music is the music of Anton von Webern. Schoenberg is referred to only occasionally and then as something of an old fogey. Pousseur writes, for instance: "In his [Schoenberg's] later work the new forces are too often cast into a rhythmic scheme and subjugated by the imposition of academic formal principles, so that sometimes only a caricature, intended or otherwise, remains!" Even Webern is regarded more as a forerunner to post-Webernism (including electronic music) than as a complete artist in himself. In a statement that might be seriously questioned for its description of Webern's technique, Eimert states: "Webern was the first composer to move on from the single level conception of the twelve-tone technique; namely that of a technique of organizing pitch levels. In his work, for the first time, we see the beginnings of a three-dimensional row technique — of what in short, we know as serial technique. Webern restricted his music to interval and single note, and composed structures which are not in the traditional sense developed in a continuum, but which proceed by autonomous 'leaps,' leaps which in the pre-electronic stage could achieve everything but that final step from the bounds in instrumentally tempered sound. Only in electronic music has the real sense of these developments been realised!"

Stuckenschmidt, in his article, "The Third Stage," offers as a statement of fact an observation which comes very close to the heart of the whole electronic matter and which might well be rephrased in the form of a question. After delineating the first two stages of music as the vocal and the instrumental, he goes on: "The third, the electronic stage, retains human participation in the compositional process, but excludes it from the means of realisation. Such a dehumanized music is conceived by the intellect alone; the range of experience derived from traditional procedure is transferred to a radically new material."

The question that arises here is whether a dehumanized music, conceived by the intellect alone, is in fact capable of expressing that range of experience the author refers to. On the answer to this question depends the future of the "new" art — whether it will prove to be a

"third stage" or a blind alley.

Vol. II: Anton Webern.

After ploughing through Die Reihe I, the second volume, devoted to Webern, comes as a ray of light, not to say a breath of fresh air. Certainly the publisher's intention was not that this volume should weaken a great deal of what was written in the first. Yet this is the effect.

A part of the volume is devoted to Webern's own prose — letters and short articles. Here is not a trace of the arrogance and cocksureness characteristic of some of his self-appointed followers. One has the strong impression that Webern would disapprove heartily of post-Webernism in most of its manifestations.

In his "Homage to Arnold Schoenberg," Webern writes: "There is an impression about that Schoenberg teaches his own style and forces his pupils to adopt it. But this is utterly untrue. Schoenberg teaches no style at all; he neither advocates the use of old means of artistic expression, nor of new." From pupils of Webern we know that he too would have been the last to maintain that his way pointed the road to musical salvation.

Far from turning his back on the past and thinking of a "third stage" that would relieve composers of the necessity of possessing a broad knowledge of music of the past, Webern wrote to Berg: "There are few things as marvellous as Christmas. Should not Beethoven's birthday be celebrated in the same way?" The letters reveal Webern as an immensely human person with a broad interest in music, literature and philosophy of all periods. One such letter, also addressed to Berg, warrants citation in full:

"I am giving you Kant's letters because I wish you to become acquainted soon with this splendid, remarkable mind.

"I do not know very much of his, either. But I am striving towards a very exact knowledge of him.

"It is remarkable that on the one hand Beethoven and Kant, and on the other Wagner and Schopenhauer were roughly contemporaries. I always feel a spiritual affinity. The influence of Schopenhauer on Wagner was really considerable. And in the other noble pair I feel a concord of minds, although of course Kant had no influence on Beethoven such as one could speak of with the other two.

"And Strindberg and Mahler?

"Maeterlinck and Schoenberg?

"Also Strindberg and Schoenberg!

"Rays of God!"

Of particular interest is a portion of Webern's introduction to Heinrich Isaak's Choralis Constantinus, which appeared in the Denkmäler der Tonkunst in Oesterreich under Webern's editorship. (Webern's doctoral dissertation was also written on the same work.) This introduction shows Webern as a scholar of keen analytical powers whose interest was centered on the substance of Isaak's music rather than on those external matters that are only one aspect — the shell, so to speak — of stylistic analysis. We read, for instance: "The discantus here is so expressive — one need mark only the utterly splendid melody..." Or later: "What is wonderful is precisely how Heinrich Ysaak grasps with the greatest insight the spirit of the chant..."

These, and other similar words of Webern, are those that one could wish engraved in large letters and hung over the composing tables of all those who claim to be his followers. Too often the self-appointed disciples forget that their adopted master was concerned not with theories, logarithms, calculations or, for the matter, serial technique per se. His entire interest was in music and in musical expression. He would certainly have approved of post-Webern total serialism only to the extent that it produced real music with real meaning.

The greater part of the 100-page booklet that is Die Reihe II is devoted to studies and analyses of his music. Some of the same authors encountered in the first volume are again represented: Eimert, Stockhausen, Boulez, Krenek, Pousseur. One has somewhat the impression that Die Reihe is a kind of fraternal journal of an "exclusive" club. This is perhaps unfortunate, for the volunteer disciples are not those most likely to view Webern in the whole. On the contrary, they are often inclined to see in Webern what they want to see in him or what they themselves have (for themselves) made of him. They being post-Webernites, Webern is in turn regarded as a "pre-them."

Many a musician will take exception to many statements in this part of the book. A sampling follows:

"To realise a structural web, Webern uses only the proved and the provable; everything else is rigorously excluded, and rightly, since it has no firm foundation. In intervals Webern discovered structure free from content, structure that is no longer the structure "of something," that behaves much more as a pure phenomenon."

Again Eimert, referring to comments on Webern by Humphrey Searle and René Leibowitz: "When composers write about Webern and compose like Schoenberg, one may be sure that they will figure out the picture wrongly." A beautiful non sequitur. By the same token, however, composers who write like Webern should refrain from making disparaging statements about Schoenberg, as is their wont.

Boulez: "There is indeed only Debussy whom one can compare with Webern — in their common tendency to destroy all formal organisation pre-existing the work itself, in their common recourse to the beauty of sound for its own sake, in their common elliptical pulverisation of the language." (Many of Boulez' fellow-travellers would also take

exception to Webern's alleged recourse to the beauty of sound for its own sake.)

Despite the one-sided approach to Webern and his music, the analytical section of Die Reihe II is interesting, provocative and often illuminating. Five essays by Spinner, Pousseur, Stockhausen, Metzger and Klammer consist of, or include, analyses of specific movements. Christian Wolff contributes a brief but penetrating article on "Movement," which ends with the astute observation: "And the use of total serial control may introduce an irrelevant complexity. There is rather an inevitable natural complexity in things (cf. the structure of a tree); and it cannot finally be precisely indicated or controlled or isolated. To insist on determining it totally is to make a dead object. The complete control of a work, were it possible at all, would render it utterly impenetrable, put an end to its existence."

It can be reported with pleasure that the translations in the second volume of Die Reihe are infinitely more satisfactory than in the first. Volume II is also adorned with twelve full-page illustrations that contribute much to its appearance.

EVERETT HELM

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TONALITY-ATONALITY-PANTONALITY. By Rudolph Reti. MacMillan, New York, 1958. 130 pp. and 36 pp. musical illustrations, $5.50.

This last work of the author of The Thematic Process in Music (1951), published posthumously under the direction of his wife, has a provocative title that should attract the attention of any devotee of 20th-century music. Its terminology is simple enough, its literary style lucid enough, to make its content accessible and meaningful for the performing musician and the layman, as well as the theorist and composer. A serious interest in the development of musical style in the 20th century is the only prerequisite for the enjoyment of this book.

The main thesis of the book, presented forthrightly in the first seven pages, is that the dissolution of harmonic tonality in the late 19th century led to two stylistic developments, atonality and pantonality. The former finds its first exponent in Schoenberg; the latter, in Debussy. The development from Schoenberg's free atonal style to carefully manipulated twelve-tone serialism as a means to secure atonal results is succinctly outlined by the author. He then continues, in support of his belief that atonality is a temporary stage in the development of pantonality as a stylistic synthesis, to point out that the younger generation of serial composers is using serial techniques to produce anything except atonal music. His words become prophetic when we realize that the author died before he could have known that Boulez (from whose music he quotes examples) and others of the post-Webern serialists have suddenly developed an intense interest in the music of both Debussy and Stravinsky.

Just as the author regards atonality a short-lived but essential sidepath to a new style, his discussion of it becomes an illuminating but brief excursion from the main stylistic trend described in his book: the fusion of harmonic and melodic tonality to produce the "modern tonality" of Debussy, the foundation for the pantonality of many living composers.

The author begins his argument with a definition of harmonic tonality that is unquestionably controversial. He demonstrates that the music of the 18th and 19th centuries is an expansion in time of a basic harmonic progression: I-x-V-I, where x represents "the actual 'music' within the scheme, which through the annexed formula V-I, is made into a unit, a group, or even a whole piece" (p. 11). He narrows his definition of harmonic tonality in a somewhat surprising way when he states that "all other progressions [other than V-I and I-V] are the composer's free invention and do not in themselves express tonality" (p. 11). As examples of melodic tonality, the author cites the monodic literature of the Near East where a tonic is established through the frequent reiteration of the same pitch. He then points out that "the tunes of the 'melodic' type vanished from the picture the moment harmonic tonality became the dominant concept in music and that they could not reappear until harmonic tonality was abandoned" (p. 18).

The author then devotes the most telling chapter of his book to a detailed demonstration of how Debussy combined melodic tonality with modulation to achieve what he terms "modern tonality." Since the author views any secondary dominantic progression as a modulation, he is saying in effect that Debussy, while modulating constantly, nevertheless achieves a sense of over-all tonal integrity through the reiterative devices of melodic tonality. Although this observation should not startle any thinking theorist, its lucid presentation here, together with a careful analysis of Debussy's Reflets dans l'eau, should provide the practical musician with valuable insights into an important stylistic development.

The author draws a clear distinction between polytonality, contrapuntally juxtaposed tonalities, and pantonality, in which "the ear instinctively singles out the tonics, and connects each of them to any successive phrase with which they can enter into a tonically meaningful relationship... Moreover, the tonality by which the connexion is perceived may be either harmonic or (perhaps even more often) melodic tonality" (p. 61). Here is the crux of the author's definition of pantonality. It would be a pleasure to report that the author developed this general definition into a detailed and documented account of the nature of this stylistic procedure. Unfortunately, he does not do so. He contents himself with a rather loosely organized presentation of some salient features of "pantonal" music with a minimum of illustration for each. These features are:

1) consistent harmonic tension achieved by the introduction of new dissonant elements at the point of melodic resolution of previous dissonant elements;

2) the establishment of tonality through the frequent reiteration of the identical pitch;

3) "pan-rhythmic" procedures which amount to the simultaneous presentation of various mixed meters (as opposed to "a-rhythmic" procedures which obscure meter entirely);

4) "athematic" music "in which the course develops ... freely without using the affinity of thematic shapes as a structural bond" (p. 94);

5) an expansion of coloristic devices which culminates in "electro-musical experiments" which will provide the composer with "both an infinite, uninterrupted series of pitches, and an infinite, uninterrupted series of musical colours" (p. 105).

The author concludes his discussion of pantonality with an analysis of music by André Jolivet and himself, demonstrating that current pantonal music is a synthesis of the various types of tonal and atonal procedure fostered by the dissolution of harmonic tonality. The author seems to suggest that pantonality may enjoy as long a reign of stylistic supremacy as that previously enjoyed by harmonic tonality, some two to three hundred years.

Although we would agree with this thesis and welcome any attempt to demonstrate it, we closed this book with a sense of regret. Many cogent points are made, but the whole leaves us with an impression of uncertain groping in a new musical realm. If pantonality is to become the common practice of the future, and we are inclined to suppose this, it will require more rigorous and perceptive summaries of its theoretical premises than this book offers. The author has an intuitive grasp of the truth of the matter, but he fails to implement this with forceful argument and demonstration. We can only hope that this book will be regarded, as it should be, as a pioneering attempt in an area of musical practice which will ultimately give rise to a series of much more specific and significant theoretical accounts of a new common practice.

DAVID KRAEHENBUEHL

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THE STRUCTURE OF MUSIC: A LISTENER'S GUIDE. By Robert Erickson. Noonday Press, New York, 1957, 209 pp., $1.45.

First published in a hard cover in 1955, Mr. Erickson's book has now been brought out in a soft paper-backed edition, designed for the less well-heeled reader. Its present cover is embellished with quotations from laudatory reviews that appeared on the first printing, taken from such journals as High Fidelity, The Reporter and MLA Notes. The general tone of these reviews is easiest seen in Mr. R. D. Darrell's summing up, "I got an electrifying shock as I dipped into the pages of this latest 'guide', ... as it became unmistakably evident that I had encountered no half-baked theorist or sugary commentator, but a pene-

trating and eloquent intelligence!' In addition to these little scraps, the book is prefaced by Virgil Thomson, whose opinion is wholeheartedly in favor of Mr. Erickson's approach; "... Robert Erickson's The Structure of Music can dissect with equal effectiveness a Mass by Ockeghem, a quartet by Mozart and a symphony of Anton Webern!' In view of all these opinions of unqualified approval and ecstasy, a subsequent reviewer cannot help but be somewhat timorous in advancing a small dissenting vote.

In essence, Mr. Erickson's goal is the understanding of counterpoint and the place it occupies in the compositions of various periods and various masters. Beginning with the simplest constituent of counterpoint, melody, he moves through a discussion of vertical relationships, harmony, to the final synthesis of these two diverse elements within the overall framework of counterpoint. At various places he writes on the problems facing the composer in each area, giving various methods of analysis and examples of the principles involved. To illustrate his points, he has included musical excerpts from almost every period of musical history, beginning with the 12th-century St. Martial School and running through men such as Machault, Dufay, Josquin, Bach, Haydn, Beethoven, Wagner, Schoenberg, Berg and Webern, to name only a few. References are made to such eminent writers as Kurth, Helmholtz and Stumpf, although one does not find mention of what would seem so obvious an authority as Heinrich Schenker.

Although not so stated, it is obvious that Mr. Erickson is attempting to show that all the techniques of dodecaphonic music, so much in vogue, are directly traceable to certain basic practices common to all composers of all periods and nationalities. If these procedures are understood by the "listener," there will be an immediate comprehension of much that he now resents and dislikes. There is always the unspoken attitude that, if the "listener" can make it through the complexities of Dufay, Okeghem, Bach, Beethoven, et al there will be no difficulty with the products of the post-World War I Viennese School and their disciples. To help the "listener" achieve this satisfying state, it suffices to explain, in much detail, the various divisions and sub-divisions of his three main areas, melody, harmony and counterpoint, with particular attention to all the devices of this last. As the climax of the book, we are quickly given breakdowns of the fugue and its parts, canon, double and triple counterpoint, cantus firmus, the chorale prelude, isorhythm, ostinato and ground bass. Indeed, a casual inspection of the table of contents gives one something of the frightened feeling gotten on first glancing into Ebenezer Prout and Percy Goetschius.

As an attempt to approach the complex problems facing the present-day auditor, the book deserves commendation as a good try, for an honest effort to face the questions involved is always worth applause. But, as a musicologist and music historian, this reviewer is not so sure that the approach is either valid or comprehensible to the putative audience.

A major problem facing any student of music, be his specialty

the practical field or the theoretical, is the understanding of music. In general, most approaches have been through the teaching of what we consider the elements of music, i.e. harmony and counterpoint, no matter what the method may be. The order of events may be varied and certain subdivisions may be emphasized, but these two subjects form the foundation of our curricula, regardless of the colors under which they may sail.

While these areas may be and should be considered in the same fundamental position as grammar in the study of language, it is our opinion that they can take no higher position than that. In other words, grammar is useful in the study of both Shakespeare and James Joyce, but it cannot be expected to realize the essence of what these two men stand for. So it is with harmony and counterpoint, for they can do no more than point up a few similarities and give a vocabulary for the description of various compositions and styles.

The missing element, one that harmony and counterpoint by themselves cannot supply, is the element of historical position and the consequent aesthetic goal. It is obvious that counterpoint of one kind or another is written by Dufay, Bach and Berg, and that certain broad similarities can be found, if the range of examination is restricted. But this does not solve the problem of why these composers do not sound the same or why they have so many variances in their approaches to the same problem. The only answer, not given or suggested in this book, is the closer observation of the aesthetic goals desired by these three composers and an attempt to determine how their technical procedures are ruled by their vision of those goals. To assume that, because two procedures of different periods look much the same, they are the same under the skin, is to ignore completely the many studies that have been made on style and how various composers understand the implications of their own theoretical foundations. We all agree today (or so I hope!) that to use Rameau's methods of harmony to discuss Palestrina is a betrayal of the composer; similarly, Mr. Erickson's suggestion that Bach's complexity in the Art of the Fugue and that of Ernst Krenek in the finale of his String Quartet No. 6 are comparable is of much the same degree of impossibility. In this connection, his statement that "the formal plan [of Krenek's work] simply mirrors the profound difference in outlook between composers of the eighteenth and composers of the twentieth century" is extremely significant; this difference in outlook is precisely what Mr. Erickson never gets at.

It is possible to describe a dish at a banquet by giving a list of its ingredients, but it does not give the dish itself, for the ingredients are only important insofar as they make up the final gourmet's delight. Mr. Erickson has furnished an elegant list of condiments and said what each of them is but has failed to tell us anything about the end product. Dufay, Bach and Berg are alike in many ways, but is this fact half so important as that they are different? The "listener," poor fellow, wants to know what they are getting at, not what Mr. Erickson describes as how they get there.

ALBERT SEAY

LEARNING TO LISTEN, A HANDBOOK FOR MUSIC. By Grosvenor Cooper. University of Chicago Press, Chicago, Ill. 1957, 167pp., $3.75.

Learning to Listen is an outgrowth of the Humanities I course which has been given at the University of Chicago for the last several years. One third of the course, required of all freshmen, is devoted to music; the remainder, to art and literature. This book, used as a text for the music section, is organized into two main divisions: "Musical Process," six chapters entitled "Rudiments," "Movement," "Harmony," "Form," "Color," and "Style"; and "Constructive Elements," chapters on "Common Procedures and Types" and "Scales." There is also a Musical Supplement containing the scores of works referred to in the text and a Glossary-Index.

The basic approach of the writer is implicit in his title. The Introduction warns the student not to take what he reads without listening first, last and always. The principal aim of the book is to build into the student's ear an understanding of the basic concepts enumerated above in the first division of the text, culminating in the ability to comprehend and appreciate various musical styles by ear alone.

Three chapters of the first division deal with elements of music which are non-controversial. The presentation of "Rudiments" is remarkable chiefly for a parenthetical remark on p. 17 that the section on notation may be omitted. Inasmuch as the very next chapter demands competent handling of a string-quartet score, and thick-textured piano music in F-sharp major, one wonders if there has not been some slip-up in the organization of the book. If scores are to be used, notation must be taught; if they are not, there is no point in including musical examples.

The treatment accorded harmony is quite a straightforward description of the various sorts of triads and cadences. At the end of the chapter a Bach chorale is quoted and the student is asked to hear how the voice-leading "creates" the chords and how force and direction are provided by the harmonic progressions. It would seem that far more elaborate training, amounting to a course in harmony, would be necessary for a previously untrained student to really perceive aurally these rather subtle phenomena. The chapter on "Color" presents the overtone series, explains instrumental timbre and describes briefly the evolution of the orchestra. The second division of the text contains a listing of the basic formal types, refreshingly free from the dogmatism of earlier volumes in this area, and a brief summary of the scales commonly in use.

It is in the three chapters of the first division, "Movement," "Form," and "Style," that the heart of the author's approach is to be found. "Movement" begins with an extended melodic analysis of two well-known melodies, "Londonderry Air" and "Adeste Fideles." The concepts of phrase and motive, antecedent and consequent, symmetry and asymmetry in phrase organization are developed. Then this method of analysis is projected onto larger pieces, a Mozart minuet and trio,

and a Chopin prelude. This evolves into a unity-variety comparison of the two works and the chapter concludes with an analysis of another Chopin prelude. What is impressive here is the skill with which the author builds up his system using only elements actually perceivable by the ear. Equally important is the way in which these elements are related to the more general impression which a given piece of music makes upon the student. All too often, the neophyte is unable to relate what he learns about a piece to his own personal response; however, Mr. Cooper integrates the two elements smoothly.

Much the same train of thought is continued in the treatment of form. A three-part song-form, a sonata-allegro movement and a fugue are analyzed. Each element of the form is studied and evaluated with reference to the ideas previously developed. How expectation is aroused and how that expectation is increased, fulfilled, or frustrated by what follows is discussed. The emphasis is entirely upon what can be heard, not upon academic prototypes.

The chapter on style, which concludes the first division, is a penetrating essay, using Stravinsky and his relationship to the Russian nationalist school as a point of departure. It is, however, a sophisticated treatment which draws upon a wide range of repertory and demands a far higher degree of musical literacy for comprehension than anything else in the book. The student is advised in a footnote to "familiarize" himself with a list of works which includes eleven composers and a number of lengthy pieces. It is difficult to imagine a class, no matter how well trained, able to understand such an essay after only one-third year's introduction to music. Still less could one expect them to be able to think similarly about other styles.

Of course it is difficult to fairly review a book like this one, associated as it is with a single course in a single university, without knowing the course itself. The apparent gaps between the elementary work and the rather advanced material may be filled in by lectures, guided listening, or other means. It must be said that the book as it stands is a vigorous and imaginative approach to an enormously important educational problem, but that it would require considerable supplementation and much more class time to be fully effective.

THOMAS GRISWOLD

Other Books Not Reviewed

Kennan, Kent. COUNTERPOINT: BASED ON EIGHTEENTH CENTURY PRACTICE. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1959, 211pp.

Kennan, Kent. COUNTERPOINT WORKBOOK. Prentice-Hall, Inc. Englewood Cliffs, N. J., 1959, 57pp.

Krenek, Ernst. TONAL COUNTERPOINT IN THE STYLE OF THE EIGHTEENTH CENTURY. Boosey and Hawkes, Ltd., New York, 1958, 44 pp., $1.50.

Sessions, Roger. THE MUSICAL EXPERIENCE OF COMPOSER, PERFORMER AND LISTENER. Princeton University Press, Princeton, N. J., 1958, 127 pp., $1.50.

Vollaerts, Dr. J. W. A., S. J. RHYTHMIC PROPORTIONS IN EARLY MEDIEVAL ECCLESIASTICAL CHANT. E. J. Brill, Leiden, Netherlands, 1958, 245pp., 25 glds.

Woodhouse, Frederick. THE ART AND THEORY OF MUSIC: AN INTRODUCTION FOR STUDENTS, TEACHERS AND LISTENERS. Pitman Publishing Corp., New York, N. Y., 1958, 115 pp.

BIBLIOGRAPHY OF CURRENT PERIODICAL LITERATURE

Compiled by
Donald Loach

The articles listed below have appeared in periodical publications since June 1958.

Music Periodicals in English

Cazden, Norman, "The Principle of Direction in the Motion of Similar Tonal Harmonies,"
Journal of Music Theory 2:162-92, Nov 58.

Coons, Edgar and David Kraehenbuehl, "Information as a Measure of Structure in Music,"
Journal of Music Theory 2:127-61, Nov 58.

Craft, Robert, "Boulez and Stockhausen,"
Score 24:54-62, Nov 58.

Hauser, A.A., "American Music Publishing in 1958,"
Notes 15:377-83, Jun 58.

Keller, Hans, "The Home-coming of Musical Analysis,"
Musical Times No. 1390:657-8, Dec 58.

Kraehenbuehl, David, "Scholarship and Creativity: A Challenge of Opposites,"
American Music Teacher Vol. 8, No. 1:3+, Sep 58.

Langer, Susanne K., "The Principle of Assimilation,"
Score 24:42-53, Nov 58.

Lenneberg, Hans, "Johann Mattheson on Affect and Rhetoric in Music (II),"
Journal of Music Theory 2:193-249, Nov 58.

Pauli, Hansjorg, "On Stravinsky's 'Threni',"
Tempo 49:16-33, Autumn 58.

Piston, Walter, "More Views on Serialism,"
Score 23:46-9, Jul 58.

Powers, Harold S., "Mode and Raga,"
Musical Quarterly 44:448-60, Oct 58.

Sessions, Roger, "To the Editor,"
Score 23:58-64, Jul 58.

Simon, Edwin J., "The Double Exposition in the Classic Concerto,"
Journal of the American Musicological Society 10:111-18, Summer 57.

Truscott, Harold, "Style in Music,"
Music Review 19:211-21, Aug 58.

Other Periodicals in English

Dickinson, George Sherman, "Analogical Relations in Musical Pattern,"
Journal of Aesthetics and Art Criticism 17:77-84, Sep 58.

Neilson, F., "Music and Learning,"
American Journal of Economics 17:225-36, Apr 58.

Taylor, Irving A. and Frances Paperte, "Current Theory and Research in the Effects of Music on Human Behavior,"
Journal of Aesthetics and Art Criticism 17:251-8, Dec 58.

Music Periodicals in Other Languages

Benary, Peter, "Der zweistimmige Kontrapunkt in Bartoks 'Mikrokosmos',"
Archiv für Musikwissenschaft 15:198-206, 1958.

Federhofer, Hellmut, "Zur handschriftlichen Ueberlieferung der Musiktheorie in Oesterreich in der zweiten Hälfte des 17. Jahrhunderts,"
Die Musikforschung 11:264-79, 1958.

Moser, Hans Joachim, "Musiktheorie als Musikpraxis,"
Musica 10:595-7, Oct 58.

Petzsch, Christoph, "Die rhythmische Struktur der Liedtenores von Adam von Fulda,"
Archiv für Musikwissenschaft 15:143-50, 1958.

Richter, Lukas, "Die Aufgaben der Musiklehre nach Aristoxenos und Klaudios Ptolemaios,"
Archiv für Musikwissenschaft 15:209-29, 1958.

Van Waesberghe, Joseph Smits, "Antike und Mittelalter in unserem Tonsystem,"
Musica 12:655-8, Nov 58.

Winckel, Fritz, "Die Grenzen der musikalischen Perzeption unter besonderer Berücksichtigung der elektronischen Musik,"
Archiv für Musikwissenschaft 15:307-26, 1958.

LETTERS TO THE EDITOR

On the nature of music theory

There are many prior or hidden assumptions on which "music theory" is based — I feel that a very thorough examination of these should be undertaken in your magazine. You lean, editorially, rather too heavily on the notion of the "physical" or "natural" basis of music theory as one would expect from the followers of Hindemith. I would like to see other points of view given a fair hearing. It seems also that the notion of "historicism," of the university as the magnifier of the "dead" (not always still alive) past and the consequent neglect of the thinking of the present day and particularly the composing of the present, might be a subject.

Elliott Carter

(We hope to print at some future date an expansion of Mr. Carter's brief comments. — Ed.)

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ANNOUNCEMENT

VOLUME III, Number 2

Appearing in November 1959

With this issue a new series of articles with the general title "The Foundations of Harmonic Theory" and presenting summaries of the harmonic principles developed by Rameau, Tartini, Marpurg, and Kirnberger will be initiated. The first of these articles, THE EVOLUTION OF RAMEAU'S HARMONIC THEORIES, is by Joan Ferris and will present a carefully annotated summary of Rameau's theoretical contribution.

TOWARD A NEW CONCEPT OF TONALITY? by Roy Travis will make a new and fruitful application of the general concepts of structure developed by Heinrich Schenker. The composers whose music will be analyzed are Stravinsky and Bartok.

In THE PHYSICAL BASIS OF INTERVALLIC QUALITY, Richard Bobbitt explores further the problems of defining consonance and dissonance on the basis of both acoustical and psychological principles.

THE HARMONIC TENDENCY OF THE HEXACHORD by George Rochberg discusses some of the harmonic procedures that can develop out of a specialized manipulation of a 12-tone row.

The THEORY FORUM will include a discussion of the training and responsibilities of the professional music theorist as well as further discussion of the proper domain of music theory as an intellectual and artistic discipline.

The BOOK REVIEWS and BIBLIOGRAPHY OF CURRENT PERIODICAL LITERATURE will be continued.

INDEX to Volumes I and II.

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